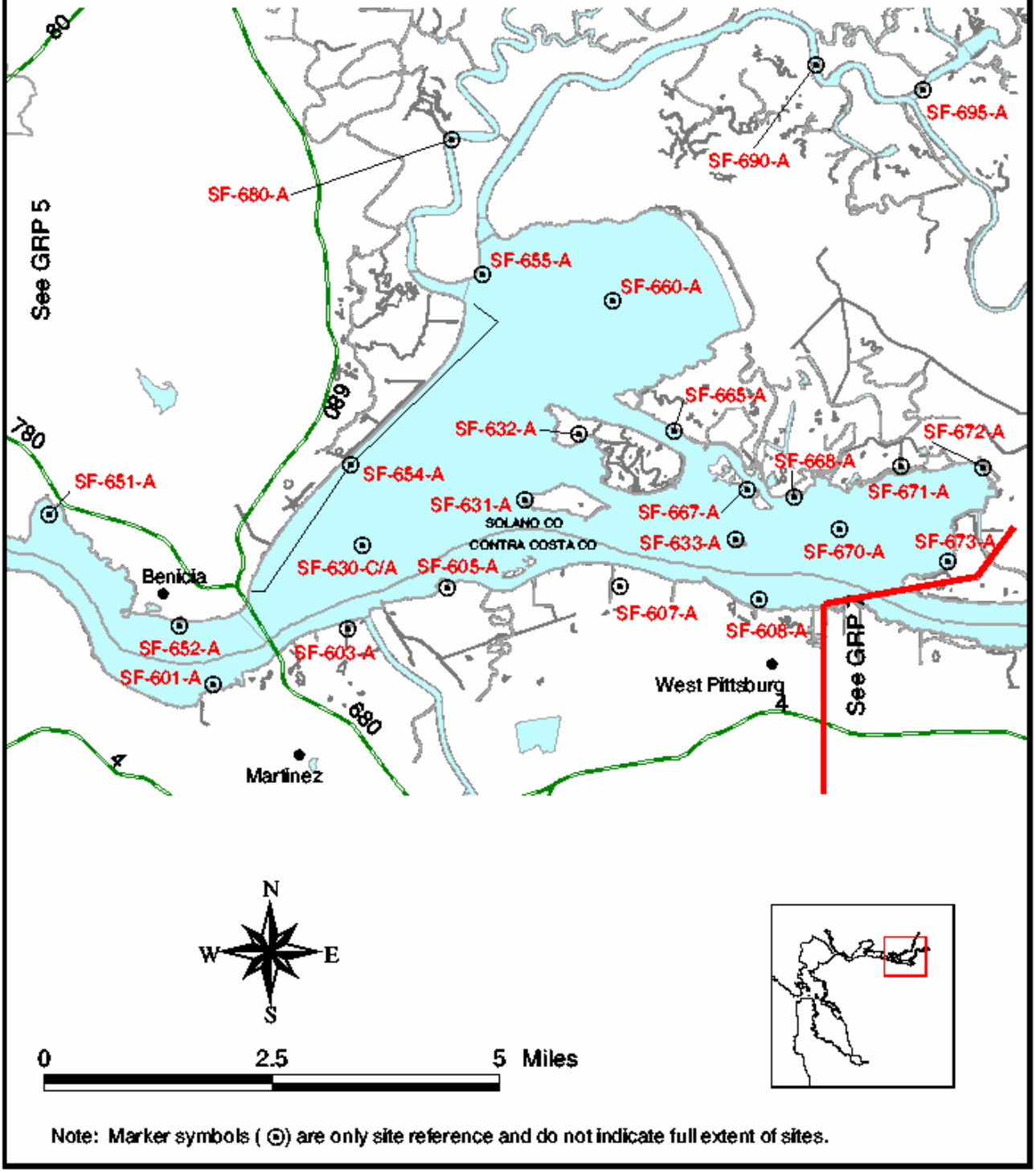
SF Geographic Response Area 6
Carquinez Strait/Suisun Bay
Environmentally Sensitive Sites



Note: Marker symbols (⊙) are only site reference and do not indicate full extent of sites.

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GRP 6 Site Index/Response Actions

Site ID	Priority	Site Name	Assignment	Date/Time Required	Date/Time Completed
SF-601		Martinez Marsh and Shell Dock Marsh			
SF-603		Bulls Head Marsh and Pacheco Creek			
SF-605		Hastings Slough, Pt Edith and Seal Isls			
SF-607		Belloma Slough			
SF-608		Shore Acres Marsh			
SF-630		Suisun Shoal			
SF-631		Roe Island			
SF-632		Ryer Island			
SF-633		Middle Ground Island			
SF-651		Southampton Bay			
SF-652		Benicia Marsh			
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SF-655		Joice Island, Suisun Slough, and Montezuma Slough			
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Table of Respsonse Resources

Site ***Site Name***

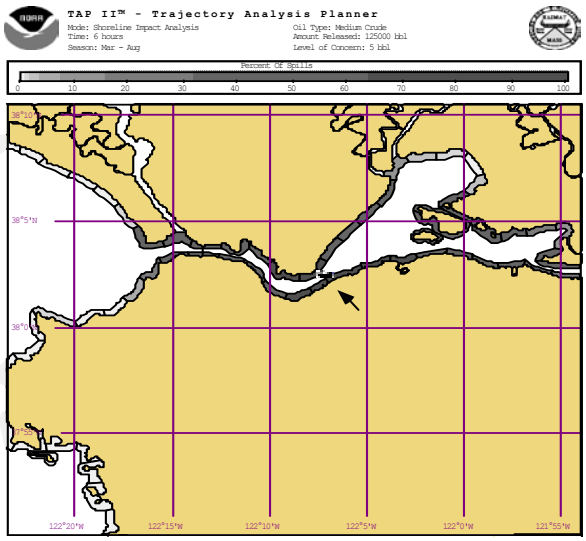
sub-strategy **PREVENTION OBJECTIVE OR CONDITION FOR DEPLOYMENT**

Boom	Harbor boom	Swamp boom/TYPE	Other boom	Sorbant No	Anchoring type of gear	Boom boat	Skiff No	Skimmer Type	Special Equipment No	and kinds	(and notes)	deploy staff	Staff to tend
2-601	***Martinez Marsh***												
. 1 -	**For oil on the flood tide, exclude from entering Alhambra Creek and protect nearby shoreline from oil. Exclude**												
0	250		1300	1	1/12#+/ anchor & stakes	0	1				boat capable of shallow grounding	2	
. 2 -	**For the ebb tide, deflect oil away from and past Alhambra Creek & marsh with deflection boom**												
600				1	1/22+/danforth + 20' chain	1	0					3	
. 3 -	**Deflection for the Flood Tide: deflect away from Martinez shore**												
2000				4	4/22+/danforths	3	1					11	
. 4 -	**Proctive Shoreline Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective**												
0	8500			9	9/12/danforths & stakes	3	3				bboats - very shallow, strandable.	15	
2-603	***Bulls Head marsh and Pacheco Creek***												
. 1 -	**Exclude oil from entering Pacheco Creek, Peyton Slough and four other tidal channels**												
1300	1100		600	15	5/22+ & 10/12+/danforths + chain	1	2				bboat: strandable, shallow water, stakes	7	
. 2 -	**For flood tides, deflect oil to collection site in Pacheco Creek on Avon refinery shoreline to prevent oil spread to**												
1700	2500		300	5	5/22+/danforth + chain	2	2	1	SSS		stakes, bboat: strandable, shallow water	8	
. 3 -	**Marsh front protective booming: If there is threat of heavy oiling and saturation of the marsh front, and when**												
9000				14		3	1					11	
. 4 -	**Collection/ containment of upstream threats: If oil is moving down Pacheco Slough from an inland spill, deploy a**												
0	1600			6	6/12+ and stakes		1	1	SSS			3	
2-605	***Hastings Slough, Point Edith and Seal Islands***												
. 1 -	**Exclude oil from Hastings Slough and tidal channels to prevent oil from being carried into marsh on flood tides.**												
2600	1000			37	5/22+ & 32/12+ danforth, crown	4	6				bboat: shallow, strandable. Stakes	24	
. 2 -	**Deflect oil away from shoreline on flood tide.**												
2000				5	5/22+/danforths + 20'chain	3	0					9	
. 3 -	**Marsh front protective booming: If there is threat of heavy oiling and saturation of the marsh front, and when**												
7000				10	10/22+/danforths	4	2				bboats: very shallow, groundable.	14	
2-607	***Belloma Slough***												
. 1 -	**Exclusion booming of Belloma Slough.**												
350			300	12	3/12+/danforth & stakes	0	1					2	
. 2 -	**Exclusion by sediment dike of Belloma Slough.**												
0	0	0	0	0		0	0	0	0				
2-608	***Shore Acres Marsh***												
. 1 -	**Exclude oil from small tidal channels which admit oil to back marsh. Close dead-end sloughs to reduce oil**												
0	500		500	10	10/3/danforths & stakes	1	1					3	
. 2 -	**Deflect oil away from shoreline and into main channel. Deflect any by-passing oil to shore capture/collection.**												
3000				18	18/22#+ danforths + 15' chains	3	2	1	SSS			11	
. 3 -	**Marsh front protective booming: If there is threat of heavy oiling and saturation of the marsh front, and when**												
8000				10	10/22+/danforths & stakes	4	2					16	
2-630	***Suisun Shoal***												
. 1 -	**Haze birds off exposed bar: Only at direction of Wildlife Branch Chief**												
0							1				4 hazinf devicies on flosting platforms	2	
2-631	***Roe Island***												
. 1 -	**Exclude oil from entering tidal channels and penetrating interior of island.**												
	600		300	6	3/12#+/danforths & stakes	0	1				very shallow boat, draft airboat or hovercraft &	2	
. 2 -	**Deflect booming at west end of island.**												
3000				7	7/75+/danforth + 20 heavy chain	3	1					9	
2-632	***Ryer Island***												
. 1 -	**Exclude oil from entering east section of Island though levee breaks and penetrating the west section interior**												
2200	1700		3000	30	15/22#+& 15/5#+/danforth, 80	4	3				1 very shallow draft boats & 18 flags	18	
. 2 -	**Deflect oil away from seal haulout at northwest tip.**												
400				4	4/22+/danforhts + 20'+ chain							3	
. 3 -	**Reducing south shore impacts by closing barrow channel inlets.**												
0	3000			5	5/12+/ anchors + 40 stakes	1	1				boats - very shallow draft	4	
2-633	***Middle Ground Island***												
. 1 -	**Flood tide deflection if oil threatens from SW.**												
1500				4	4/22#+ danforths & chain	2	1					8	
. 2 -	**Flood tide deflection if oil threatens from NW.**												
0	1500			4	4/12+/danforhs & stakes	1	2					7	
2-651	***Southampton Bay***												
. 1 -	**Deflect boom past the site on the current contour line.**												
1200				3	3/22+/danforths + chain	2	1					8	
. 2 -	**Protective booming of marshy exposure. The main focus of protection should be the inner marsh.**												
0	5000		3000	6	6/22+/danforhts + chain & stakes	3	2				Bboats: very shallow draft	13	
. 3 -	**Shoreline containment and recovery**												
300				2	2/22+/danforth + chain	1	1	1	SSS			4	
2-652	***Benicia Marsh***												
. 1 -	**Exclusion boom tidal inlets.**												
0	150		150		20 stakes							2	
. 2 -	**Deflection to collection: If oil is near shore due to spill origin or wind, this is a good area for diversion to shore**												
0	2000			4	4/12+/danforhts and stakes			1	portable		Bboats: very shallow draft	6	
. 3 -	**Protective booming of entire marsh front: When heavy or continuous re-oiling is emminant and deployment will**												
0	5000		1000	8	8/22+/danforths & stakes	2	1				Bboat: very shallow draft	8	

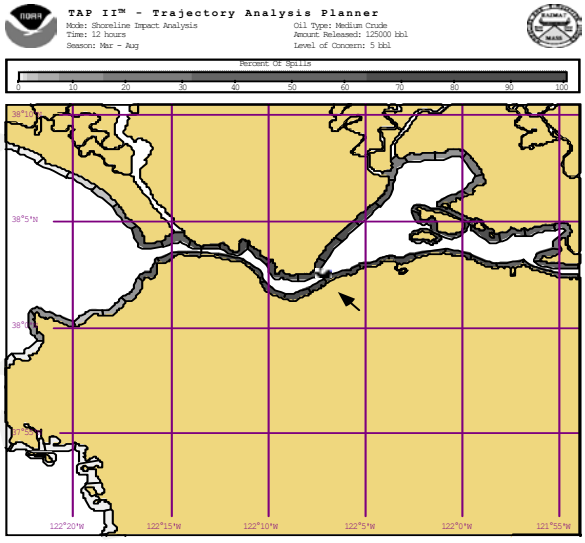
Harbor Boom	Swamp boom	Other boom/TYPE	Sorbant boom	Anchoring No	type of gear	Boom boat	Skiff	Skimmer No	Type	Special Equipment No	and kinds	(and notes)	deploy staff	Staff to tend
2-654 Goodyear Marsh														
. 1 -	**Exclude oil from all tidal sloughs, inlets, and Sulfur Springs Creek to keep oil out of back marsh.**													
0	300			3	3/5#+ anchor and stakes		1					one airboat/hovercraft/shallow boat		2
. 2 -	**Deflect to collection: When heavy oiling/reoiling is a threat on incoming tide with a southerly wind, intercept**													
1000	1400		100	4	4/22+/danforths + chain & stakes	2	2	2	SSS/SPS			Bboats: very shallow draft		8
. 3 -	**If oil continues to threaten marshfront, deploy protective booming as recommended in SF Inlet Study by RPI/MSRC**													
0	27000			20	20/12+/danforth & stakes	8	2					Bboats: very shallow draft		28
2-655 Joice Island, Suisun Slough, and Montezuma Slough Mouth														
. 1 -	**Exclude from minor and major sloughs: deflect to collection Suisun and Montezuma Slough mouths and chevron**													
3700	800			9	9/22+/danforths + chain	6	2	2	SFS or					14
. 3 -	**Protective booming of undiked tip of Joice Island**													
9000				15	15/22+/danfroths + chain	10	2							30
2-660 Grizzly Bay														
. 1 -	**Protective booming of northeast prograding marsh**													
13000				26	26/22+/danforth + chain	12	2							40
. 2 -	**Deflection at Pt. Buckler. Keep oil in the Suisun Cut channel and imped it from moving across Grizzly Bay.**													
300	0	0	0	2	22#+/danforth & chain	1	0	0	0			shallow draft boom boat - grounding capable		3
2-665 Simmons Island														
. 1 -	**Collection/Exclusion of heavy oil flow though Suisun Cutoff, divert the oil to shore collection areas.**													
4000				15	22#+ danforth & CHAIN	4	2	2	SSS			3500' of line		16
. 2 -	**Exclude oil from entering barrow channels and slough entrances.**													
1100	1550			16	16/22+/danforth + chanin	2	4					very sallow craft, airboat, hovercraft etc.		15
. 3 -	**Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom**													
10000	15000			15	anchors and stakes	10	6					2 hovercraft/airboat; 4 very shallow Bboat		44
2-667 Freeman & Snag Islands														
. 1 -	**Exclude oil from entering openings to perimeter barrow channel and interior channels of Freeman Island.**													
1200	250			8	8/12+/danforths & stakes	1	2							7
. 2 -	**Depending on winds, divert oil past windward pockets to minimize shore oiling for Freeman and to lessor**													
1300				6	6/22+/danforths & stakes	2								6
. 3 -	**Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom**													
4000	13000			18	18/22+/danforth & stakes	5	3							21
2-668 Dutton Island														
. 1 -	**Exclude oil from entering barrow channels and slough entrances.**													
0	2500													12
. 2 -	**Exclude by Diversion to Collect at shore line: If heavy oil is threatening Honker Bay and shorelines**													
1500				7	22#+ danforths & heavy chain	3	2	1	SSS			extra line for scope		11
. 3 -	**Protective booming of shoreline: When prevailing wind and oil threatens to overwhelm these measures,**													
0	6000			6	6/22+/danforths & stakes	6	3					hovercraft/airboat; very shallow draft Bboats		18
2-670 Honker Bay														
. 1 -	**intercept oil approaching the bay with towed skimming arrays.**													
800	700					4	0	2	towed					15
. 2 -	**If heavy oil is approaching the shore, divert the oil to collection areas.**													
1300				2	3/22+/danforht + chain and stakes	3	2							11
. 3 -	**Protect the 2-mile stretch of marshfront from approaching heavy oil slick with protection/exclusion boom.**													
11000				12	12/22+/danforth + chain	4	6					Bboat: very shallow draft; 1 hovercraft		25
2-671 Honker Bay West - Wheeler Island														
. 1 -	**Exclude oil from entering barrow channels and slough entrances.**													
1300	700			6	6/12+/danforhts & stakes	2	4							15
. 2 -	**exclusion/deflection boom at the best angle fend oil past marshfront when heavy oil is approaching the shore -**													
1700				3	3/22+/danforths	3	2							11
. 3 -	**Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom**													
11000				12	12/22+/danforths & stakes	4	4					hovercraft. air boat; 4 very shallow Bboats		20
2-672 Honker Bay North - Van Sickle Island														
. 1 -	**Exclude/collect oil: exclude from entering Spoonbill Creek and barrow channels and divert to collection on Van**													
800	300		300	8	8/12+/danforths	2	2	1	SSS					10
. 2 -	**Deflect to collection site: use prevailing winds**													
2000			500	5	5/22+/danforths w chain	2	1	1	SSS			hovercraft. airboat		8
. 3 -	**Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom**													
12000				12	12/22+/danforths & stakes	4	6					very shallow Bboat, hovercraft/airboat		25
2-673 Honker Bay East - Chipps Island Shore														
. 1 -	**Exclude oil from entering barrow channels and slough entrances.**													
0	1700		500	20	3/12+& 2/5#+danforth & 15 stakes	1	1							5
. 2 -	**At Pt Simmons, deflect the oil past site to keep oil in channel and to avert carry-back into Honker Bay on eddy.**													
600				3	3/22+/danforth w chain	1	1							11
. 3 -	**Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom**													
13000						6	6					shallow Bboats, 1 hovercraft/airboat		25
2-680 Suisun Marsh West: Suisun Slough														
. 1 -	**Minimize spread of oil through channels: use multiple diversion booms to collection sites, and close all side**													
3000				24	24/22+/danforths	4	4	4	portable			Bboats; very shallow; 1 hovercraft		14
2-690 Suisun Marsh Central: Grizzly Isl / Montezuma Slough														
. 1 -	**Contain/exclude - minimize spread of oil through channels: use multiple diversion booms to collection sites, and**													
0	4000			32	32/22+/danforths	5	8	4	portable			bboat: shallow draft; 1 hovercraft		31
2-695 Suisun Marsh North: Denverton / Nurse Slough														
. 1 -	**Confine/Exclude - Minimize spread of oil through channels: use multiple diversion booms to collection sites, and**													
0	2000			16	16/22+/danforths	3	6	4	portable			Bboat: shallow draft; 1 hovercraft		21

PROBABILITY OF OIL REACHING EACH SENSITIVE SITE IN GRA(GRP) 6

GRP 6



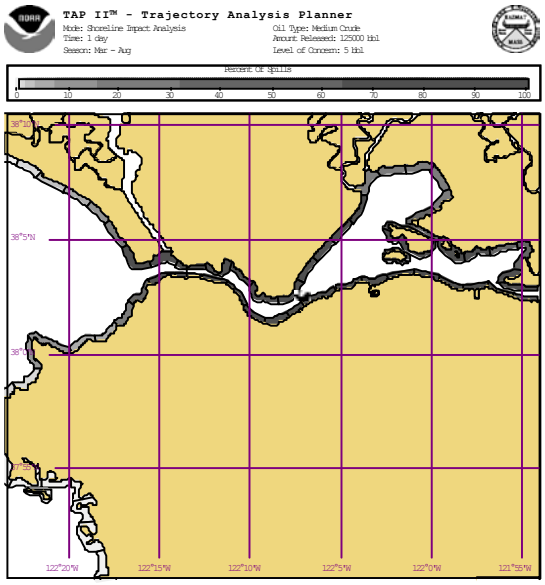
6 hours from start of spill



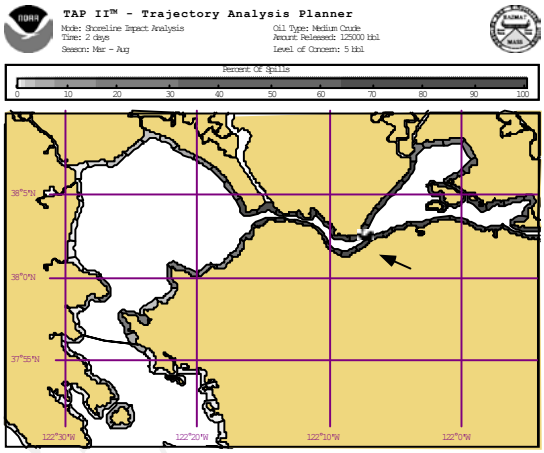
12 hours from start of spill

TAP II Maps for GRP6 Scenario: Spill of 125,000 bbls of crude at Carquinez Bridge in the Spring. Arrow indicates spill origin. The shades of grey at each impacted site correspond to a percentage in the legend of the number of spill scenarios (from 500 runs of various wind, tides and currents) that brought more than 5 bbls (= Level Of Concern) of oil to that site in the specified time frame (6hours or 12 hours).

GRP 6



24 hours from start of spill



48 hours from start of spill

TAP II Maps for GRP6 Scenario: Spill of 125,000 bbls of crude at Carquinez Bridge in the Spring. Arrow indicates spill origin. The shades of grey at each impacted site correspond to a percentage in the legend of the number of spill scenarios (from 500 runs of various wind, tides and currents) that brought more than 5 bbls (= Level Of Concern) of oil to that site in the specified time frame (24 hours or 48 hours).

Table of Percent of Spills that Bring Oil (> 5bbls) to Each Site in GRP6 Scenario

ACP SITE#	ES	SITENAME	LAT N (Deg. Min.)	LONG W (Deg. Min.)	6 HOURS (% prob)	12 HOURS (% prob)	24 HOURS (% prob)
2-630	A	Suisun Shoal	38 03.5	122 06	100	100	100
2-654	A	Goodyear Marsh	38 04	122 07	100	100	100
2-603	A	Bulls Head Marsh and Pacheco Creek	38 03	122 07	99	100	100
2-605	A	Hastings Slough, Point Edith and Seal Island	38 03	122 03	70	93	97
2-601	A	Martinez Marsh	38 02	122 08	66	90	99
2-652	A	Benicia Marsh	38 02.7	122 09.7	62	86	96
2-631	A	Roe Island	38 04	122 02	54	78	87
2-607	A	Belloma Slough	38 03	122 01	48	70	80
2-632	A	Ryer Island	38 05	122 02	47	68	78
2-651	A	Southhampton Bay	38 04	122 11	46	75	96
2-608	A	Shore Acres Marsh	38 08	121 58.8	40	56	64
2-633	A	Middle Ground Island	38 03.7	121 59	40	56	64
2-667	A	Freeman & Snag Islands	38 08.8	121 59.5	40	54	69
2-583	A	Napa River Marshes	38 12	122 19	37	60	83
2-660	A	Grizzly Bay	38 08	122 02	37	48	56
2-665	A	Simmons Island	38 05.4	122 00	37	48	56
2-670	A	Honker Bay	38 04	121 56.3	36	21	26
2-702	A	Stake Point Marshes	38 03	121 57	34	46	62
2-582	A	N.E. San Pablo Bay	38 05	122 17	33	52	77
2-668	A	Dutton Island	38 08.8	121 59.5	31	44	58
2-705	A	Mallard Island	38 02	121 55	30	42	60
2-752	A	Chips Island, Southern Side	38 04	121 55	27	36	57
2-673	A	Honker Bay East - Chipps Island Shore	38 04	121 56.3	26	35	52
2-655	A	Joice Island, Suisun and Montezuma Sloughs	38 08	122 04	15	25	29
2-671	A	Honker Bay West - Wheeler Island Shore	38 04	121 56.3	8.8	27	35
2-672	A	Honker Bay North - Van Sickle Island Shore	38 04	121 56.3	3.6	21	26
2-504	A	Pinole Pt. Marshes - North	38 05	122 21		8.8	12
2-503	A	Pinole Pt. Marshes-South	37 59	122 21.6		7.2	10
2-501	A	Castro Creek and Marshes	37 58	122 24		3.6	5
2-506	A	San Pablo Bay Eelgrass Bed	37 59	122 25		3.6	5
2-452	A	Richmond Eelgrass Beds	37 58	122 24		3.4	5.6
2-427	A	Marin Islands	37 58	122 28		2.6	7.6
2-551	A	McNear's Beach Marshes	38 00	122 27		2.6	7.6
2-552	A	China Camp Marsh	38 00	122 28		2.6	7.6
2-505	A	Pinole Creek and Wetlands	38 01	122 18		2.6	3.6
2-502	A	San Pablo Creek Marshes	37 58.5	122 23		0.4	0.8
2-452	A	Richmond Eelgrass Beds	37 58	122 24			0.4
2-426	A	San Rafael Creek Marsh	37 58	122 29			0.2

RESPONSE PRIORITIES FOR BENICIA BRIDGE SCENARIO * GRP (GRA) 6

TIDE AND WIND AT TIME OF INSTANEOUS DISCHARGE OF ANS	TIME PERIOD OILED (HOURS)	PRIORITY	SITE ID	SITE DESCRIPTION
SLACK < EBB - 10 NW	0	1		Spill Site Containment
WINTER RUNOFF	0	2		On-Water Recovery
125,000 bbl ANS crude	0-3	3	601	Martinez Marsh
	0-3	4	654	Southampton Bay
	3-6	5	603	Bull's Head Marsh
	6-12	6	582	NE San Pablo Bay (jetty)
	6-12	7	605	Hasting's Slough & Pt Edith
	6-12	8	631	Roe Island
	12-24	9	505	Pinole Creek
	12-24	10	503	Pinole Point
	12-24	11	632	Ryer Island
SLACK < EBB - 20 S	0	1		Spill Site Containment
WINTER RUNOFF	0	2		On-Water Recovery
125,000 bbl ANS crude	0-3	3	651	Southampton Bay
	6-12	2	601	Martinez Marsh
	6-12	3	603	Bull's Head Marsh
	6-12	4	582	NE San Pablo Marsh (jetty)
SLACK < FLOOD TIDE	0	1		Spill Site Containment
10 KNOT NW WIND	0	2		On-Water Recovery
WINTER RUNOFF	0-3	3	603	Bull's Head Marsh
125,000 bbl ANS crude	0-3	4	605	Hasting's Slough
	0-3	5	607	Belloma Slough
	0-3	6	631	Roe Island
	0-3	7	601	Martinez Marsh
	3-6	8	608	Shore Acres
	3-6	9	632	Ryer Island
	3-6	10	633	Middle Ground
	6-12	11	702/705	Stake Pt. Marsh / Mallard Island
	6-12	12	708	Chipp's Island
SLACK < FLOOD TIDE	0	1		Spill Site Containment
20 KNOT S WIND	0	2		On-Water Recovery
WINTER RUNOFF	0-3	3	654	Mothball Fleet Marsh
125,000 bbl ANS crude	3-6	4	655	Joice Island
	6-12	5	660	Grizzly Bay
	12-24	6	632	Ryer Island
	12-24	7	631	Roe Island
	12-24	8	603	Bull's Head Marsh
	12-24	9	601	Martinez Marsh
	12-24	10	662	Simmon's Island

* Based on Oil map trajectory model run by BlueWater Consultants in 1996
¤ Response strategy not yet written

2-601-A Martinez Marsh - Site Summary 2-601 -A

County: Contra Costa **GRP:** **Latitude** 38 02 N **Longitude** 122 08 W
USGS: Benicia **OSPR Map:** **Last ACP Update** 04/26/1995

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site includes the marshes and waterfront from the Benicia-Martinez Bridge to the Ozol pier. This site has pickleweed saltmarshes on both the east and west side of the Martinez marina. The marshes are prograding with emergent species along the very shallow margins. The marsh to the east behind the Shell Oil terminal has some diked impoundments and has a small channel leading back into the marsh. West of the Marina, Alhambra Creek opens to the marsh and has marshy vegetation along some of its length upstream. The shoreline vegetation from Alhambra Creek to Ozol Terminal grades from marsh to riprap. The marsh around the mouth of Alhambra Creek is East Bay Regional Parks shoreline.

SEASONAL and SPECIAL RESOURCE CONCERNS (seasonal issues, special status spp present, water intakes)
Marshes are A-priority at all times. Threatened and endangered species may be present throughout this site.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
Pickleweed marshes with emergent marsh margins are on both sides of the marina. Shelter tidal flats in front of the marshes provide habitat for infauna and foraging for birds and fish. The riprap at the western edge along the railroad tracks has low sensitivity.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
Marshes provide habitat for marsh birds, ducks, shorebirds, and in winter migratory waterfowl. Clapper rail and black rails may use these marshes occasionally.

Both the endangered salt marsh harvest mouse and endangered salt marsh wandering shrew are found here.
Two rare plants are found here: soft bird's beak and Delta tule pea.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	
B,O	Joseph Didonato	East Bay Regional Park District	(510) 635-0135	
B	Mike Josselyn	National Marine Fisheries Service, Tiburon	(415) 454-8868	
B	Jerry Karr	Vallero Refining Benicia / Audubon	(707) 745-7568	
B	Jan Knight	US Fish and Wildlife Service	(916) 978-4866	
B	Dr. Naill McCarten	Botanical Research	(510) 841-8145	
B,O	Bill Nichols	East Bay Regional Park District	(510) 228-0112	

Martinez Marsh - Site Strategy

2-601 - A

Count Contra Costa **NOAA CHART:** 18656 Suisun Bay

Latitude		Longitude	
38 02	N	122 08	W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site includes the marshes and waterfront from the Benicia-Martinez Bridge to the Ozol pier.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Air - Martinez Bridge power lines; Boats - shallow water & currents; ground traffic - railroad tracks, soft substrate

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to Responders: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
Primary concerns are oiling of marsh east and west, intrusion of oil up Alhambra Creek in the west side marsh, and intrusion up the tidal channel in the east side marsh. Exclude oil from both channels and divert oil away from marshes to catchments or to main channel. Avoid trampling marsh vegetation: rare plants and small endangered mammals are present. Avoid trampling oil into muds. Protect marsh frontage from oil as directed.

SITE STRATEGIES

Strategy 2-601.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 05/17/1999 Approved last tested ACP date 01/01/2000

Objective or Prevention Condition

For oil on the flood tide, exclude from entering Alhambra Creek and protect nearby shoreline from oil. Exclude oil from other tidal

Technique Details

1) Exclusion booming Alhambra Creek: 200' of swamp boom in a chevron configuration backed by sorbent boom at the inlet to .
2) Protection booming: Deploy 1100' of sorbent boom along the marsh to the west of Martinez Marina (both sides of creek but mostly on the west side.)
3) Exclude oil from entering the small tidal inlet to the marsh east of the marina with boom and sorbent (50' 4X4+). Tidal inlet mouth is located between Shell and Amoco Terminals/Shore Terminal wharf at bridge.

Strategy 2-601.2

(USCG Strategic Objective: **7**) **Dates:** SISRS 05/17/1999 Approved last tested 04/01/1995 ACP date 01/01/2000

Objective or Prevention Condition

For the ebb tide, deflect oil away from and past Alhambra Creek & marsh with deflection boom

Technique Details

Deploy 600' of deflection boom extending west from inside the old ferry slip at Ferry Point (the pier), Martinez Marina. Set deflection angle into the current as may be possible under prevailing conditions.

Strategy 2-601.3

(USCG Strategic Objective: **7**) **Dates:** SISRS 05/17/1999 Approved last tested ACP date 01/01/2000

Objective or Prevention Condition

Deflection for the Flood Tide: deflect away from Martinez shore

Technique Details

Deflect oil away from shoreline with 2000' 8X8+ Hboom. From the shoreline about a half mile west of treatment plant, deploy boom at a diagonal to the 15' depth contour.

Strategy 2-601.4

(USCG Strategic Objective: **8**) **Dates:** SISRS 05/17/1999 Approved last tested ACP date 01/01/2000

Objective or Prevention Condition

Protective Shoreline Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.

Technique Details **Check here means " No strategy diagram": (X)**

Deploy exclusion boom along the marsh front from the Benicia Bridge to the marina and from Alhambra Creek to the riprap to the west. Deploy 5200' of protective boom (4X4+) be deployed between Suisun Point and the Martinez Marina seawall, and deploy 3300' of protective boom (9X9+ or 4X4+ depending on presence of wind and chop) from Ferry Point at Martinez Marina to 1000 yards west where marsh ends and riprap begins. Deploy close to shore where shallows will aid with wind chop spillover problems; if there are wind chop conditions, boom layers will need to be backed with a second layer of 4X4+ boom. Because the water is so shallow, very shallow boom boats and skiffs will be required due to grounding and stranding hazards. (A similar strategy for deployment of exclusion boom is illustrated in "Potential Oil Spill Protection Strategies for San Francisco Bay, California" (Hayes and Montello, 1994).)

Table of Response Resources

strategy	hboo	swpbm	xboom	Anchoring	sorb	Bb	skif	skimmers	-No	special equip	deploy personnel	tending personnel		SO
2-601.1	0	250		1/12#+/ anchor & stakes	1300	0	1			boat capable of shallow grounding	2	2	twice daily	5
2-601.2	600			1/22+/danforth + 20' chain		1	0				3	3		7
2-601.3	2000			4/22+/danforths		3	1				11	11	2	7
2-601.4	0	8500		9/12/danforths & stakes		3	3			bboats - very shallow, strandable.	15	15	daily checks	8

LOGISTICS

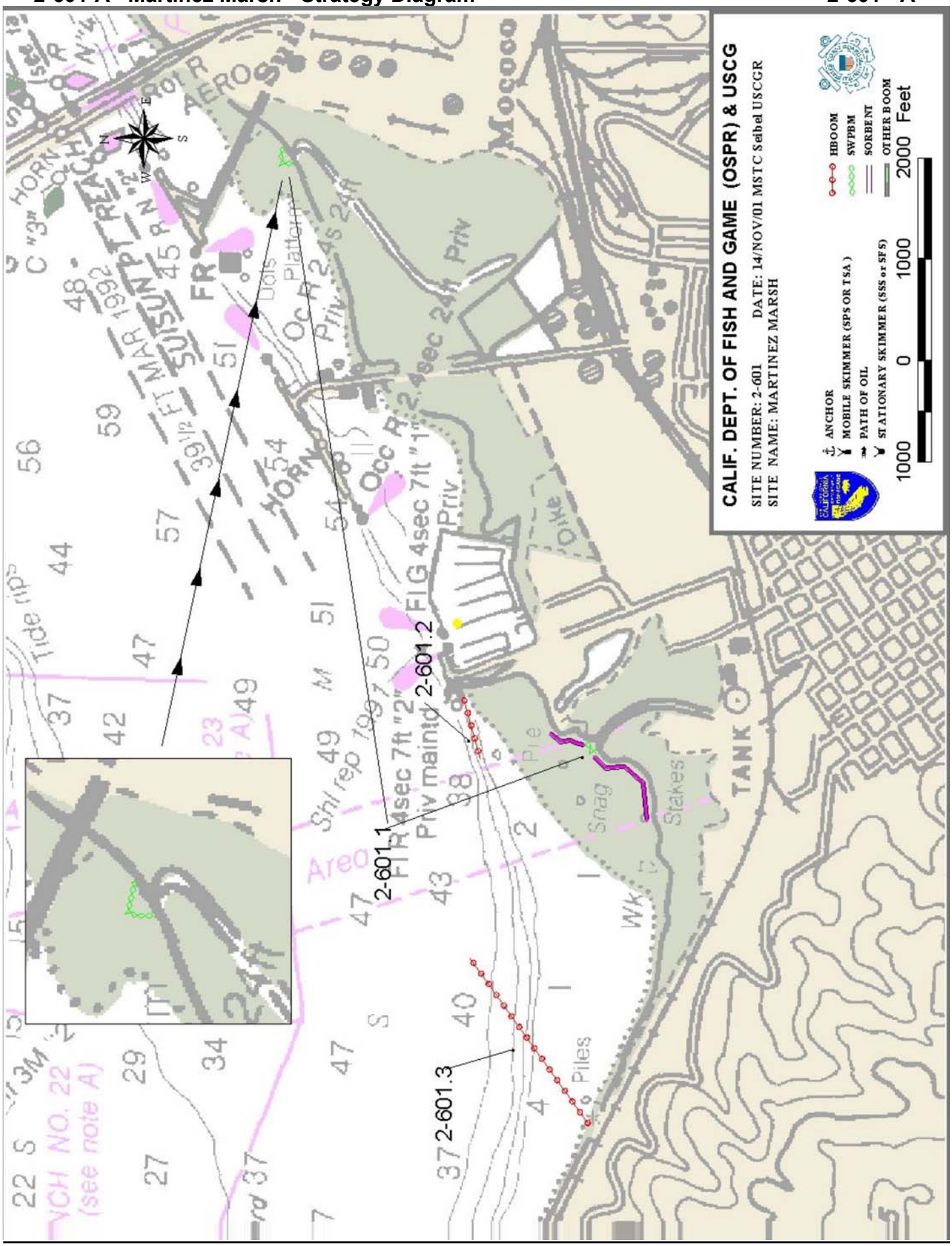
DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Proceed on Hwy 680 toward Martinez and exit on Marina Vista just south of the Benicia-Martinez toll bridge and drive west to city center. Turn right and drive across the railroad tracks to Martinez Marina. Marshes are on both sides of the Marina and park. There are access points at the Marina Vista Park (contact East Bay Regional Parks Dispatch). There is also unimproved shoreline access along the Southern Pacific Rail Road tracks on the west side of Alhambra Creek (contact SP Rail Road).

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
Thorough land access to west. Foot only to east.

WATER LOGISTICS:

Access limitations: depth, obstructions: Very shallow near shore. Some obstructions on west half.
Boat Launching, Loading, Docking and Services Available: Launching and full boat services available at Martinez Marina on-site. Most boat services are also available across the river at Benicia.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Best for this site is Martinez Marina, but Benicia has good staging facilities. Vallero Wharf also has good staging capacity.


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-601
DATE: 14/NOV/01 MSTC Seibel USCGR
SITE NAME: MARTINEZ MARSH
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
1000 0 1000 2000 Feet
2-601.1
2-601.2
2-601.3
TANK
Piles

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2-603-A Bulls Head Marsh and Pacheco Creek - Site Summary 2-603 - A

County: Contra Costa **GRP:** **Latitude** 38 03 N **Longitude** 122 07 W
USGS: Vine Hill **OSPR Map:** **Last ACP Update** 01/01/2000

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
Site extends from Benicia-Martinez Bridge to the Avon Wharf and includes the tidal marshes tributary to Suisun Bay and Pacheco Creek (also called Walnut Creek and Avon Slough) landward to Hwy 4. There are two extensive marshes south of Waterfront Road (Marina Vista Rd): Shell Marsh (tributary to Peyton Slough and owned by East Bay Regional Parks) and an unnamed marsh tributary to Pacheco Creek. The marshes north of Waterfront Rd between Hwy I-680 and Pacheco Creek are connected to the south shore of Suisun Bay by several small waterways. The marshes south of Waterfront Rd are mostly pickleweed-tule-saltgrass marshes with emergent growths along the edges of waterways and occasional patches of cattail marshes, whereas marshes to the north are dominated by tules and sedges, particularly near the water front and slough margins. Pacheco Creek is very fresh in its more upstream reaches, particularly during high rainfall periods. Salmon and Steelhead are common in Pacheco Creek but do not spawn in the system. There are various dikes and flood control channels throughout the marsh. Pacheco Creek is extremely shallow, has an even shallower bar across its mouth, and has marsh encroaching along its length. The other marsh channels tend to be deep. Regardless, the entire marshfront is mudflats at very low tides. There are three refineries, a chemical plant, and several tank farms adjacent to and tributary to this site.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
The marshes are an "A" priority all year

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
The marshes have a rich flora and range from high pickleweed-spartina marsh to cattail to emergent tule marsh on prograding shorelines and channel margins. Much of the marsh has been manipulated with dike and mosquito abatement channels. Much of the marsh beyond the tidal channels is flood only on high tides and during the rainy season.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
A variety of wading and marsh birds use this area year-round and it provides winter habitat for migratory birds and ducks. The endangered California clapper rail uses this habitat.

This is also habitat for the endangered saltmarsh harvest mouse and the saltmarsh ornate shrew.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B T		Baylands Nature Preserve	(650) 329-2506	
B	Peter Baye	U S Army Corps of Engineers	(415) 744-3322	
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
B	Mike Josselyn	National Marine Fisheries Service, Tiburon	(415) 454-8868	
B	Jerry Karr	Vallero Refining Benicia / Audubon	(707) 745-7568	
B T	Jan Knight	US Fish and Wildlife Service	(916) 978-4866	
B	Dr. Naill McCarten	Botanical Research	(510) 841-8145	

Count Contra Costa **NOAA CHART:** 18656 Suisun Bay Latitude 3 8 03 N Longitude 122 07 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
Site extends from Benicia-Martinez Bridge to the Avon Wharf and includes the tidal marshes tributary to Suisun Bay and Pacheco Creek (also called Walnut Creek and Avon Slough) landward to Hwy 4.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
This area is very shallow and exposed mudflats at low tide.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to Responders: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
Prime concern is oil being carried into the interior marsh via tidal channels and oiling of marsh margins. So, the first priority is to exclude oil from tidal channels and openings. Secondarily, there is a plan to collect oil at the Pacheco Creek shoreline to prevent its free spread and movement. As time and priority allow, the entire marsh shoreline may be protectively boomed. Avoid trampling the marsh vegetation and be aware that small endangered mammals are present. Avoid trampling oil into the mud.

SITE STRATEGIES

Strategy 2-603.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 05/17/1999 Approved last tested ACP date 04/11/2002

Objective or Prevention Condition

Exclude oil from entering Pacheco Creek, Peyton Slough and four other tidal channels

Technique Details

Deploy exclusion booms in a chevron configuration in front of each tidal slough, securing boom ends well up and downstream from the openings to avoid entrainment and short-circuiting. 1000' 9X9+ harbor (curtain) boom will be needed at the mouth of Pacheco Slough and shorter lengths of 50' and 100' at Peyton Slough and the other four tidal inlets. Back with sorbent boom. If there is wave chop which is likely to overtop the boom, deploy a second chevron layer to capture any oil wash-over using 1100' 4X4+ swamp (river) boom. If boat passage into launch ramp in Pacheco Creek for response activities, it may be necessary to have boom tending or

Strategy 2-603.2

(USCG Strategic Objective: **6**) **Dates:** SISRS 05/17/1999 Approved last tested ACP date 04/11/2002

Objective or Prevention Condition

For flood tides, deflect oil to collection site in Pacheco Creek on Avon refinery shoreline to prevent oil spread to other marsh sites, to collect it, and prevent its free movement.

Technique Details

Create a collection site at the northerly most extreme of the levee road on refinery treatment pond east of Pacheco Creek.
A) First, deploy two diagonal barriers of swamp (river) boom (700' 4X4+) to direct the oil from the mouth of the Creek to the collection site. Use stakes to anchor and maintain shape. (If response boat passage into Pacheco Creek is necessary, boom tending may be required.)
b) Then line the marsh along the east bank with swamp (river) boom (1100') and tie the boom into the exclusion boom at the mouth. Use stakes to anchor and maintain shape.
C) After the collection pocket boom is in place (a & b above), deploy a deflection boom (2700' 8X8+ harbor boom total) from the Shore Terminals Wharf to the east side of Pacheco Slough mouth to funnel the oil into collection on the flood tide. Usually exclusion strategy (2-603.1) will have been deployed first, and 1000' of boom will already be at the mouth and must be repositioned as part of the deflection (so the amount of boom needed will be 1000 ft more if that boom is not already onsite.) Use multiple anchors with heavy chain to hold the boom in position in the currents.
d) Improve the shore side collection site as necessary. Consider excavating a pocket and seek approval from IC. Place plywood or other walking surface at work site to prevent oil being trampled into muds.

Strategy 2-603.3

(USCG Strategic Objective: **8**) **Dates:** SISRS 05/17/1999 Approved last tested ACP date 04/11/2002

Objective or Prevention Condition

Marsh front protective booming: If there is threat of heavy oiling and saturation of the marsh front, and when such use will not preclude defending other sites with Strategic Objectives 5 and 6 action (seek concurrence of the trustee strategist).

Technique Details **Check here means " No strategy diagram": (X)**

Deploy protective boom along the marsh front from the Benicia Bridge to the Pacheco Slough, using 9,000 ft of harbor boom. If there are high energy wave conditions, a second layer of swamp boom may be required. (A strategy for the deployment of exclusion boom at this site is illustrated in Potential Oil-Spill Protection Strategies for San Francisco Bay, CA (Hayes and Montello, 1994).)

Strategy 2-603.4

(USCG Strategic Objective: **5,6**) **Dates:** SISRS 05/17/1999 Approved last tested ACP date 01/01/2000

Objective or Prevention Condition

Collection/ containment of upstream threats: If oil is moving down Pacheco Slough from an inland spill, deploy a containment collection as in strategy 2-603.2

Technique Details

Create a collection site at the southerly most convenient site on the windward shore, such as the Waterfront Road Pacheco Creek bridge or launch ramp.
1) First, deploy two diagonal barriers of swamp (river) boom (600' 4X4+) to direct the oil in the Creek to the collection site. Use stakes to anchor and maintain shape. (To permit boat passage into Pacheco Creek, it may be necessary to have boom tending.)
2) Line the marsh along the east bank with swamp (river) boom (1000'). Use stakes to anchor and maintain shape.
3) Improve the shore side collection site as necessary. Consider excavating a pocket and seek approval from IC. Place plywood or other walking surface at work site to prevent oil being trampled into muds.

Table of Response Resources

Strategy	hboom	swpbm	xboom		Anchoring	sorb			Bb/skif	No. skimmers	special equip	deploy staff	tending staff
SO													
2-603.1	1300	1100		5/22+ & 10/12+/danforths + chain	600	1	2				bboat: strandable, shallow water,	7	2	5
2-603.2	1700	2500		5/22+/danforth + chain	300	2	2	1 SSS			stakes, bboat: strandable, shallow	8	2	6
2-603.3	9000					3	1					11		8
2-603.4	0	1600		6/12+ and stakes				1 SSS						5,6

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Exit Hwy I-680 to Marina Visa / Waterfront Road at Martinez (exit just south of Benicia Martinez Bridge) and proceed east. There is access to the shoreline from Shore Terminal's wharf, from the Tosco Avon Refinery, and at the Bridge over Pacheco Creek. By boat, proceed east from the Martinez Marina about a mile to the area east of the Martinez-Benicia Bridge.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
only at Tosco and Shore Terminal wharf; otherwise foot only

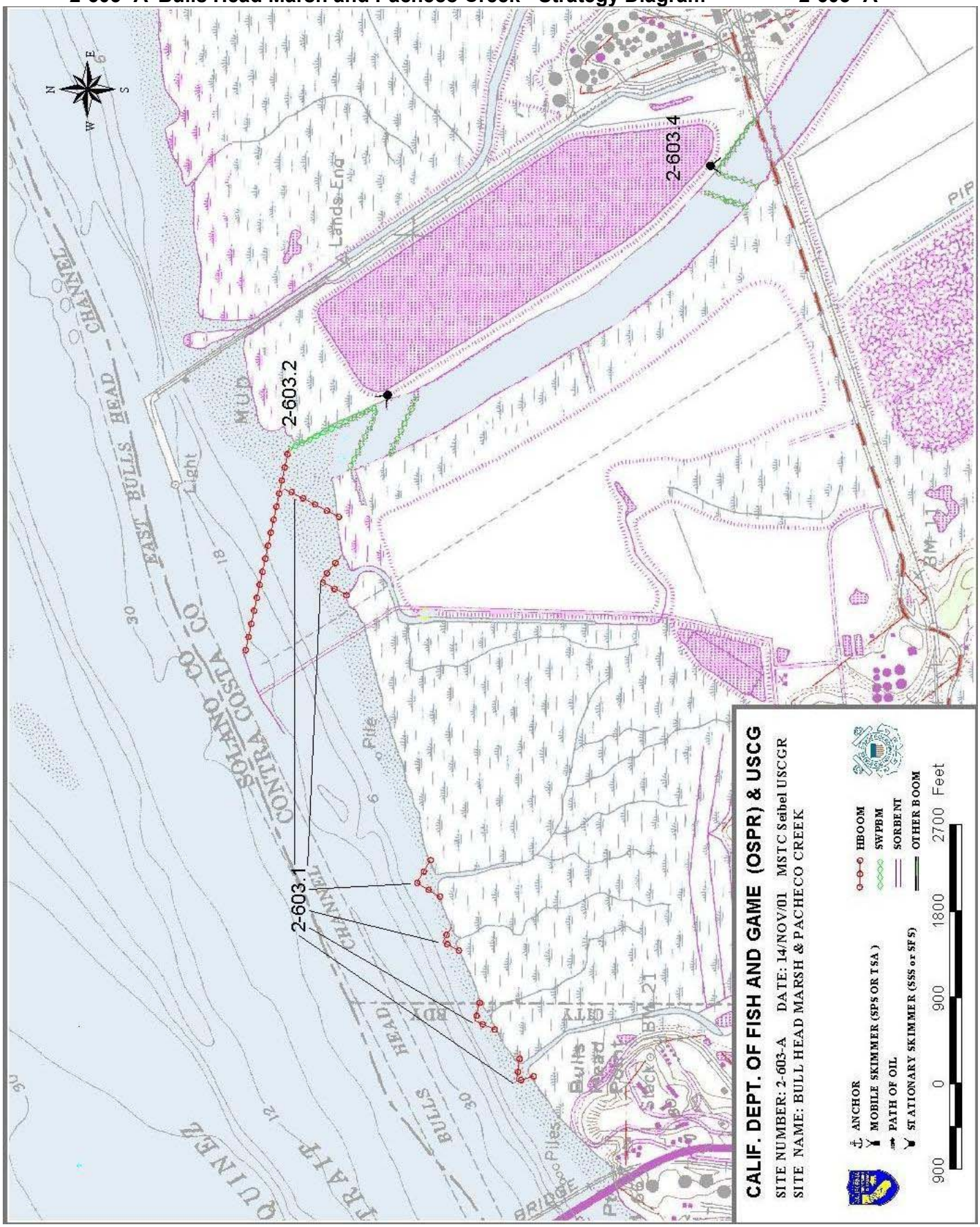
WATER LOGISTICS:

Access limitations: depth, obstructions:	exceedingly shallow - mud at low tide
Boat Launching, Loading, Docking and Services Available:	launch at Tosco to Pacheco Creek during higher tides only, otherwise Martinez Marina and Benicia Marina. Full service at Martinez and Benicia.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Best staging is at Martinez because of the amount of services available. Benicia is also a good staging site. Locally, equipment may be staged at Tosco at Pacheco Creek or at Shore Terminal wharf.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


2-603.1
2-603.2
2-603.4
CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-603-A DATE: 14/NOV/01 MSTC Seibel USCGR
SITE NAME: BULL HEAD MARSH & PACHECO CREEK
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
900 0 900 1800 2700 Feet
EAST BULLS HEAD CHANNEL
CONTRA COSTA CO
MUD
Lands End
Light
Pile
BULLS HEAD CHANNEL
Bulls Head Creek
PIP

2-605-A Hastings Slough, Point Edith and Seal Island - Site Summary 2-605 - A

County: Contra Costa **GRP:** **Latitude** 38 03 N **Longitude** 122 03 W
USGS: Vine Hill **OSPR Map:** **Last ACP Update** 01/01/2000

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
Site extends from the Tosco Avon terminal wharf to the Concord Naval Weapon Station tug dock and includes Seal Islands and the marshes tributary to Hastings Slough including those south of Waterfront Road. This marsh has a large tidal prism. There are several thousand acres of marsh most of which drain by various tidal channels to Hastings Slough. There are additional 13 tidal channels draining directly to the bay. Hastings Slough is very sinuous and has many tributary channels including Mt. Diablo Creek. There is an extensive network of mosquito abatement channels which connect the freshwater and brackish marshes between. Most of the marsh is pickleweed, but there are large stands of tules and standing ponds. Seal Islands are at the north east end of the marsh front opposite the tug docks. The islands are high marsh - spartina, sedges, and tules. The property is under three primary ownerships: California Department of Fish and Game owns the portion north of Waterfront Rd from the Avon Refinery to just east of Pt Edith and operates it as an unmanned wildlife area; the portion from Pt Edith east, including Seal Islands, and Hastings Slough and most of the land to the south of Waterfront Road are the property of Concord Navel Weapons Station Road (contact the Chief Master at Arms and tug wharf personnel for access approval); portions of the property south of Waterfront Rd and just east of the Avon refinery are refinery property.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
The marshes are an "A"-priority all year. The area is important to migratory birds in the spring and fall. Endangered species are present year-round.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
Emergent and tidal channel marshes are of highest concern because of immediate vulnerability to spills and opportunity to spread oil extensively though the marsh because of large tidal prism. Some of the internal marshes are connected by flood control structures and can be closed to exclude oil conveyance to interior marsh. Marsh types include emergent, high saltgrass, pickleweed, tule, brackish ponds, and pockets of freshwater marsh.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
The endangered California clapper rail, threatened California black rail, saltmarsh common yellowthroat, and Suisun song sparrow are found here.

The marshes are inhabited by the endangered salt marsh harvest mouse.
Several rare plants occur in this site. Mason's lilaeopsis is found in the splash zone along the marsh front. The marshes also contain the rare plant species soft bird's beak, and Delta tule pea occurs on the Seal Islands.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
BLO		Suisun Resource Conservation District		
B		Baylands Nature Preserve	(650) 329-2506	
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
ETL	Trinidad Huerta	Concord Naval W.S.- Emergency Res	(925) 246-5003	(925) 246-5174
B	Mike Josselyn	National Marine Fisheries Service, Tiburon	(415) 454-8868	
B	Jerry Karr	Exxon Oil	(707) 745-7568	
B	Jan Knight	US Fish and Wildlife Service	(916) 978-4866	
B	Dr. Naill McCarten	Botanical Research	(510) 841-8145	

2-605 -A Hastings Slough, Point Edith and Seal Island - Site Strategy 2-605 -A

Count Contra Costa **NOAA CHART:** 18656 Suisun Bay Latitude 3 8 03 N Longitude 122 03 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
Site extends from the Tosco Avon terminal wharf to the Concord Naval Weapon Station tug dock and includes Seal Islands and the marshes tributary to Hastings Slough including those south of Waterfront Road.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Some of the waterfront has very shallow mudflats. There are submerged obstructions in Hastings Slough for about 50 yds south of bridge crossing.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to Responders (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
The prime concerns are oil penetrating the marsh up tidal sloughs on tidal currents, particularly Hastings Slough, and oil saturating marsh vegetation on exposed marsh fronts and margins. Exclusion is first priority: to Hastings Slough and small channels. Next priority is to deflect oil away from these inaccessible marshy shores. During response be aware that there are very small rare plants and mammals at the shoreline. So, minimize foot traffic. Avoid trampling vegetation and avoid trampling oil into muds.

SITE STRATEGIES

Strategy 2-605.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 05/17/1999 Approved last tested ACP date 01/01/2000

Objective or Prevention Condition

Exclude oil from Hastings Slough and tidal channels to prevent oil from being carried into marsh on flood tides.

Technique Details

Exclude oil from entering all tidal sloughs using chevron booming configurations, including center anchors, and anchor boom ends well outside channel mouths to avoid entrainment and short circuiting around boom ends.

A) Hastings Slough: 1100' 9X9+ deployed in a modified chevron beginning well to the west (300'+) of the mouth. Back with sorbent boom. If wave chop is likely to wash oil over the boom, deploy a second layer of boom (800' 4X4+) close behind to catch and exclude over wash. 3/22+/danforths.

B) The 2 sloughs just east of and one at Pt Edith: (400' 9X9+ and 1/22+ & 2/12+ danforths total.) Back with sorbent boom.

C) The ten tidal openings west of Pt Edith: 100' 9X9+ for each opening except #7 (from west) requires 200' (1100' total). Back each with sorbent. Back #7 with 200' of 4X4+ and back others if wave over topping is likely.

Strategy 2-605.2

(USCG Strategic Objective: **7**) **Dates:** SISRS 05/17/1999 Approved last tested ACP date 01/01/2000

Objective or Prevention Condition

Deflect oil away from shoreline on flood tide.

Technique Details

Deploy 2000' deflection boom from just west of Pt Edith past channel marker R2 and into channel.

Strategy 2-605.3

(USCG Strategic Objective: **8**) **Dates:** SISRS 05/17/1999 Approved last tested ACP date 01/01/2000

Objective or Prevention Condition

Marsh front protective booming: If there is threat of heavy oiling and saturation of the marsh front, and when such deployment will not preclude defending other sites with Strategic Objectives 5 and 6 (seek concurrence of the trustee strategist).

Technique Details **Check here means " No strategy diagram": (X)**

Deploy protective boom along the marsh front from the Tosco Wharf to the US Navy piers and linking with existing boom deployments as convenient: an additional 7,000 ft of harbor boom and ten additional anchors will be required in combination with boom already deployed in strategies .1 and .2. (A similar strategy for the deployment of exclusion boom at this site is illustrated in Potential Oil-Spill Protection Strategies for San Francisco Bay, CA (Hayes and Montello, 1994).)

Table of Response Resources

Strategy SO	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	No. skimmers	special equip	deploy staff	tending staff
2-605.1	2600	1000	5/22+ & 32/12+ danforth, crown bouy	4	6	bboat: shallow, strandable. Stakes	24	2		5
2-605.2	2000		5/22+/danforths + 20'chain	3	0		9			7
2-605.3	7000		10/22+/danforths	4	2	bboats: very shallow, groundable.	14			8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
By boat, the site is east of the Benicia Bridge from the Avon Refinery wharf to the Navy Piers. By vehicle the site can be accessed from Waterfront Road or though US Navy Property by arrangement with Concord Navel Weapons Station -from Hwy I- 680 proceed east on Highway 4 to USN CNWS exit north on Port Chicago Highway to Base Gate to request entry. To go to site from Waterfront Rd, exit Hwy I-680 at Marina Vista (first exit south of Benicia Bridge - Waterfront Rd) and proceed west to Avon Refinery gate; request access and proceed east: Waterfront Road is blocked at the Hastings Slough Bridge by a Naval Weapons Station locked gate. Important: Permission to enter eastern portion of the area must be obtained from the U.S. Naval Weapons Station Concord. Naval response resources at the

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
All types to Waterfront Road. Otherwise foot only.

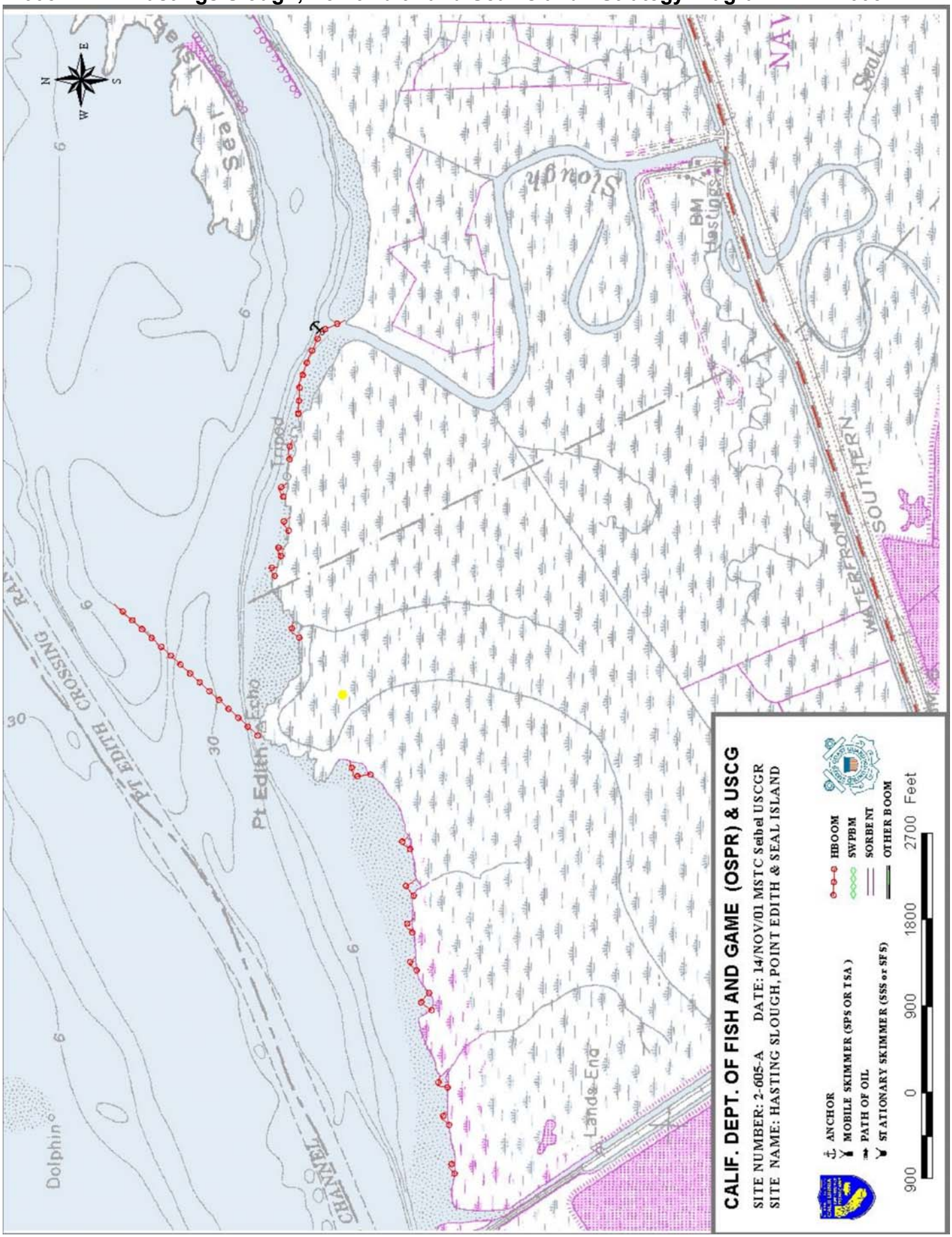
WATER LOGISTICS:

Access limitations: depth, obstructions:	Very shallow water. Exposed mud at low tide.
Boat Launching, Loading, Docking and Services Available:	very poor launch at CNWS tug wharf. Commercial Launching at Martinez, Benicia, and McAvoy's in Bay Point, all have complete services. Tosco launch is at Pacheco Slough.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Martinez and McAvoy-Harris's are two primary staging areas depending on zone of spill impacts. Both have wide variety of services and access, potential for security control.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-605-A DATE: 14/NOV/01 MSTC Seibel USCGR
SITE NAME: HASTING SLOUGH, POINT EDITH & SEAL ISLAND
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
900 0 900 1800 2700 Feet
Seal Island
Pt Edith
Echo
Point
Slough
Hastings
BM
NAVY
WATERFRONT
SOUTHERN
PT EDITH CROSSING
CHANNEL
Dolphin
Lands End
6
9
30

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2-607-A Belloma Slough Marshes - Site Summary 2-607 -A

County: Contra Costa **GRP:** **Latitude** 38 03 **N** **Longitude** 122 01 **W**
USGS: Vine Hill **OSPR Map:** **Last ACP Update** 04/12/2002

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
The Belloma Slough Marshes is an 700 acre area on Concord Navel Weapons Station land fronting on Suisun Bay from the Navy munitions docks to the Allied (Nichols) Chemical plant east of Middle Pt. The marsh is bounded on the south by the Southern Pacific Railroad tracks, on the west by railroad tracks serving the Navy docks, on the east by the chemical plant, and on the north by Suisun Bay. This is a brackish water marsh with pickleweed and spartina high marsh and tule sedge in wet areas. Three Channels connect this marsh with Suisun Bay. The largest and most westerly of these is Belloma Slough which is located adjacent to the dock rail spur. All the channels are landward of the Navy piers. This area is a very restricted military area and access can only be safely permitted through Base Security.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
The marshes are an "A" priority all year.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
These are extensive pickleweed marshes with emergent tule margin.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
The marshes are inhabited by the endangered California clapper rail and threatened California black rail. This is prime waterfowl habitat, particularly for the migratory period.

The endangered Salt marsh harvest mouse thrives here.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	
	Chief Master at Arms	Concord Naval Weapons Station - USN	(925) 246-2000	
	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Trinidad Huerta	Concord Naval W.S.- Emergency Res	(925) 246-5003	(925) 246-5174
	Jerry Karr	Exxon Oil	(707) 745-7568	
	Jan Knight	US Fish and Wildlife Service	(916) 978-4866	
	Dr. Naill McCarten	Botanical Research	(510) 841-8145	

2-607 - A Belloma Slough Marshes - Site Strategy 2-607 -A

Count Contra Costa **NOAA CHART:** 18656 Suisun Bay

Latitude		Longitude	
3 8 03	N	122 01	W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
The Belloma Slough Marshes is an 700 acre area on Concord Navel Weapons Station land fronting on Suisun Bay from the Navy munitions docks to the Allied (Nichols) Chemical plant east of Middle Pt. The marsh is bounded on the south by the Southern Pacific Railroad tracks, on the west by railroad tracks serving the Navy docks, on the east by the chemical plant, and on the north by Suisun Bay.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Unauthorized personnel or trespassers are subject to arrest. Beware of shallow and pier traffic.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to Responders (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
This extensive marsh is very sensitive and has endangered species. If oil gets into the marsh the problems will be complicated due to the military security issues here. The plan is to exclude oil from the marsh by booming or diking the inlets. Response concerns are : 1) get permission from USN before attempting any access; 2) avoid trampling vegetation: tiny endangered plants are present; avoid trampling oil

SITE STRATEGIES

Strategy 2-607.1

(USCG Strategic Objective: **5**) **Dates:** **SISRS** **Approved** **last tested** **ACP date** 04/12/2002

Objective or Prevention Condition
Exclusion booming of Belloma Slough.

Technique Details
Exclusion Booming: deploy 300 ft. of exclusion boom across the entrance to the and back with sorbent boom. Naval response resources at the Concord Naval Weapons Station may be available to boom off the slough. Verify entry authorization with main gate

Strategy 2-607.2

(USCG Strategic Objective:) **Dates:** **SISRS** **Approved** **last tested** **ACP date** 04/12/2002

Objective or Prevention Condition
Exclusion by sediment dike of Belloma Slough.

Technique Details **Check here means " No strategy diagram":** (X)
Sediment Dike: Construct a sediment dike across Belloma Slough at White Rd. (Requires BCDC and US Corp Engineer contacts). Naval response resources at the Concord Naval Weapons Station may be available to dike off the slough. Verify entry authorization with main gate security.

Table of Response Resources

Strategy	hboom	swpbm	xboom		Anchoring	sorb	Bb/skif	No. skimmers	special equip	deploy staff	tending staff	SO
2-607.1	350			3/12+/danforth & stakes	300	0	1			2		5
2-607.2	0	0	0		0	0	0	0				

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
IMPORTANT: Permission to enter the area, by land or water, must be obtained from the U.S. Naval Weapons Station, Concord. Exit Hwy 4 at Port Chicago Hwy to Main St and proceed to main gate for entry permission and directions. By water proceed along the shoreline from Martinez (east) or from McAvoy's (west) until you reach the Navy piers.

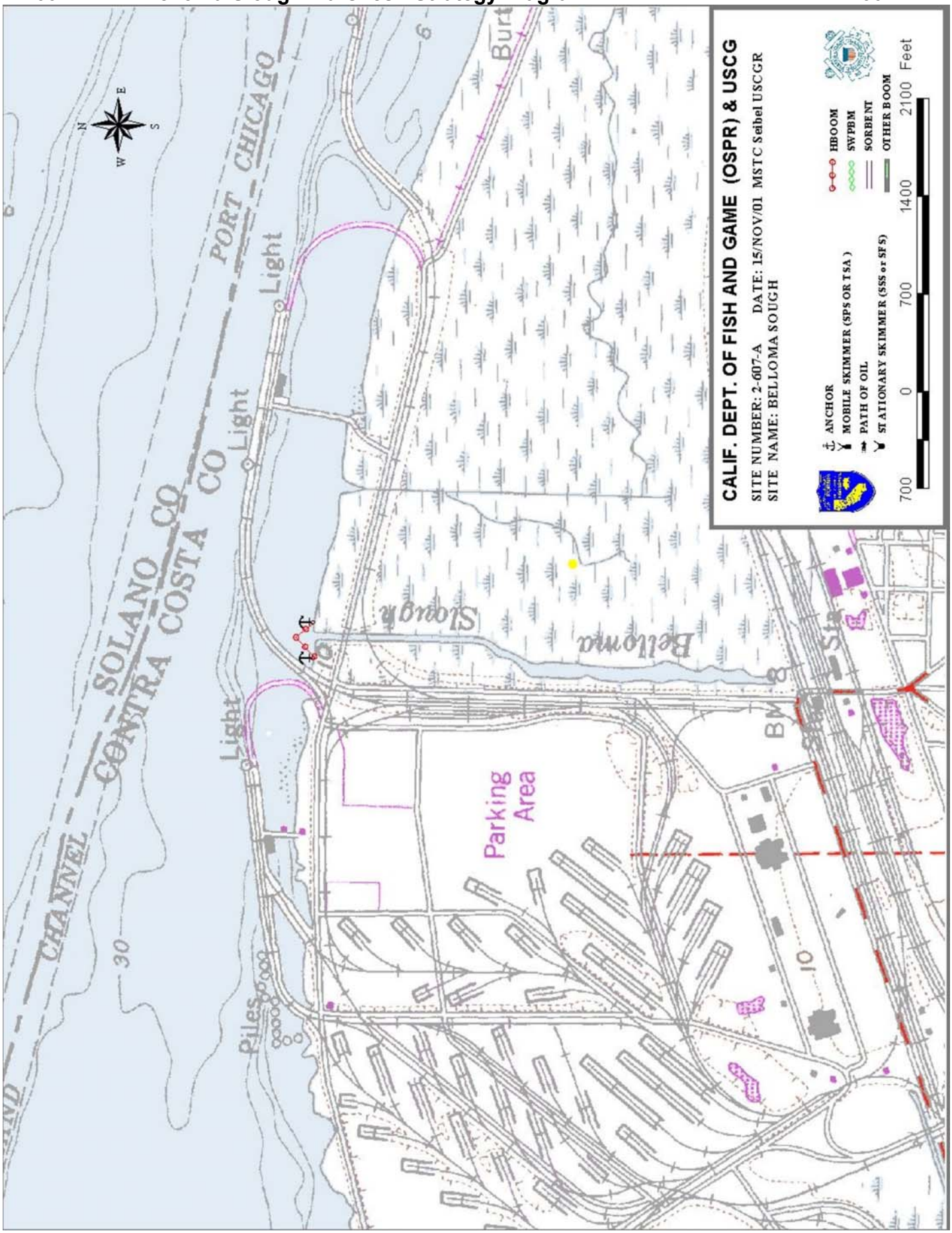
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
Belloma slough has road access; the remainder is foot only.

WATER LOGISTICS:
Access limitations: depth, obstructions: very shallow
Boat Launching, Loading, Docking and Services Available: Launch at USN CNWS tug dock, Martinez, McAvoy

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Naval response resources at the Concord Naval Weapons Station may be available to dike or boom off the slough. Stage equip at Martinez, McAvoy's or Weapons Station.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-607-A DATE: 15/NOV/01 MSTC Seibel USCGR
SITE NAME: BELLOMA SOUGH
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
700 0 700 1400 2100 Feet
PORT CHICAGO
SOLANO CO
CONTRA COSTA CO
CHANNEL
Light
Light
Light
Piles
Parking Area
Belloma Slough
BM
30
10

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2-608 -A Shore Acres Marsh - Site Summary 2-608 -A

County: Contra Costa **GRP:** 6 **Latitude** 38 08 N **Longitude** 121 58.8 W
USGS: Honker Bay **OSPR Map:** 148 **Last ACP Update** 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site extends from McAvoys Marina west to General Chemical Plant (just east of chemical plant - Middle Pt). This site is a combination of tidal and high marsh with both tule/cattails and pickleweed. It has an abrupt bank typical of eroding marsh front. Several finger sloughs carry tidal exchange to the back marsh. There are several dead-end sloughs. There is a channel along the shore front. There are two ownerships: California Department of Fish and Game owns the parcel next to the Marina and the US Navy Concord Navel Weapons Station owns the parcel next to the chemical plant.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
These marshy areas have A-protection priority always. Migratory waterfowl and marsh birds use this area during winter months.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
This site is predominantly pickleweed / spartina marsh, but there are substantial cattail and tule growths. And there are some ponded areas. The bayward eroding edge is habitat for Mason's lilaeopsis. The small tidal inlets admit tidal exchange to the back marsh and must be boomed to exclude oil from entering.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
The marshy margins are prime marsh bird and waterfowl habitat including California clapper rail, Suisun song sparrow and black rail.

The saltmarsh harvest mouse has been found here. The emergent marshes are inhabited by semi-aquatic mammals such as river otter, raccoon, beaver and muskrat. Western pond turtle has been found here.
The emergent marshes here are typical tule-sedge mix with some cattail.
Several sensitive plants occur here: Mason's lilaeopsis, Suisun marsh aster, Delta tule pea.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B		Baylands Nature Preserve	(650) 329-2506	
E/B	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 955-7800	
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
EL	Trinidad Huerta	Concord Naval W.S.- Emergency Res	(925) 246-5003	(925) 246-5174
TEL	Kent Nelson	CA Dept of Water Resources	(916) 227-7581	
E/B/L/C	Martin Vitz	East Bay Regional Park		

2-608 - A Shore Acres Marsh - Site Strategy 2-608 -A

Count Contra Costa **NOAA CHART:** SUISUN BAY 18658/18556/18656 **Latitude** 3 8 08 **N** **Longitude** 121 58.8 **W**

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site extends from McAvoys Marina west to General Chemical Plant (just east of chemical Middle Pt).

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
There is a channel immediately along shore, but there is a bar farther out.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to Responders (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
This is a sensitive saltmarsh with endangered plants and animals. Primary concern is to prevent oil from being carried into the marsh though tidal openings by using exclusion booming. Also of concern is oiling of the marsh front when tides flood the marsh front. Responders should make an effort to minimize trampling of vegetation and be aware that tiny endangered plants and animals are present.

SITE STRATEGIES

Strategy 2-608.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 07/01/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition

Exclude oil from small tidal channels which admit oil to back marsh. Close dead-end sloughs to reduce oil margin impacts.

Technique Details

The tidal channels are very small. They are located about 100', 200', and 300' west from the west McAvoy entry. Each will require 25' of 4x4+ Hboom. Boom anchoring may be necessary (as opposed to staking) because bridging may admit oil at low flood. At the dead-end slough near chemical plan, use 400' 4X4+ Hboom with stakes or anchors. Repeat deployment if currents or waves are likely to overtop boom. Leave trailing boom ends to insure a seal and prevent short-circuiting. Back with sorbent.

Strategy 2-608.2

(USCG Strategic Objective: **7,6**) **Dates:** SISRS 07/01/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition

Deflect oil away from shoreline and into main channel. Deflect any by-passing oil to shore capture/collection.

Technique Details

A) From Middle Point deploy deflection boom at the best angle fend oil past marsh front and back into main channel.
B) Setup a deflection to shore and a shore skimming collection system at General Chemical shoreline to intercept any oil which escapes above deflection.

Strategy 2-608.3

(USCG Strategic Objective: **8**) **Dates:** SISRS 07/01/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition

Marsh front protective booming: If there is threat of heavy oiling and saturation of the marsh front, and when such use will not preclude defending other sites with Strategic Objectives 5 and 6 action (seek concurrence of the trustee strategist).

Technique Details **Check here means " No strategy diagram":** (X)

When foregoing strategies are inadequate to keep oil off marshes, 8000 ft of harbor boom will be deployed along the entire marsh front to keep heavy oiling off the marsh. Multiple layers may be required if oil is washing over the first layer (second layer may then be swamp boom.) (This strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes

Table of Response Resources

Strategy	hboom	swpbm	xboom		Anchoring		sorb	Bb/skif	No. skimmers	special equip		deploy staff	tending staff	SO
2-608.1	0	500		10/3/danforths & stakes	500	1	1				3	3 PERSONS	freq checks:	5
2-608.2	3000			18/22#+ danforths + 15' chains		3	2	1 SSS			11	11PERSONS	2 tenders, 3	7,6
2-608.3	8000			10/22+/danforths & stakes		4	2				16	16 PERSON.	use above	8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
This site can be reached taking the Bay Point (Willow Pass) exit from Hwy 4 and then to Port Chicago Highway: marsh access though a locked gate (This is Concord Naval Weapons Station property). Also, via the General Chemical Plant. By water, the site is immediately west of McAvoy's Marina.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
ALL TYPES DEPENDING ON WEATHER

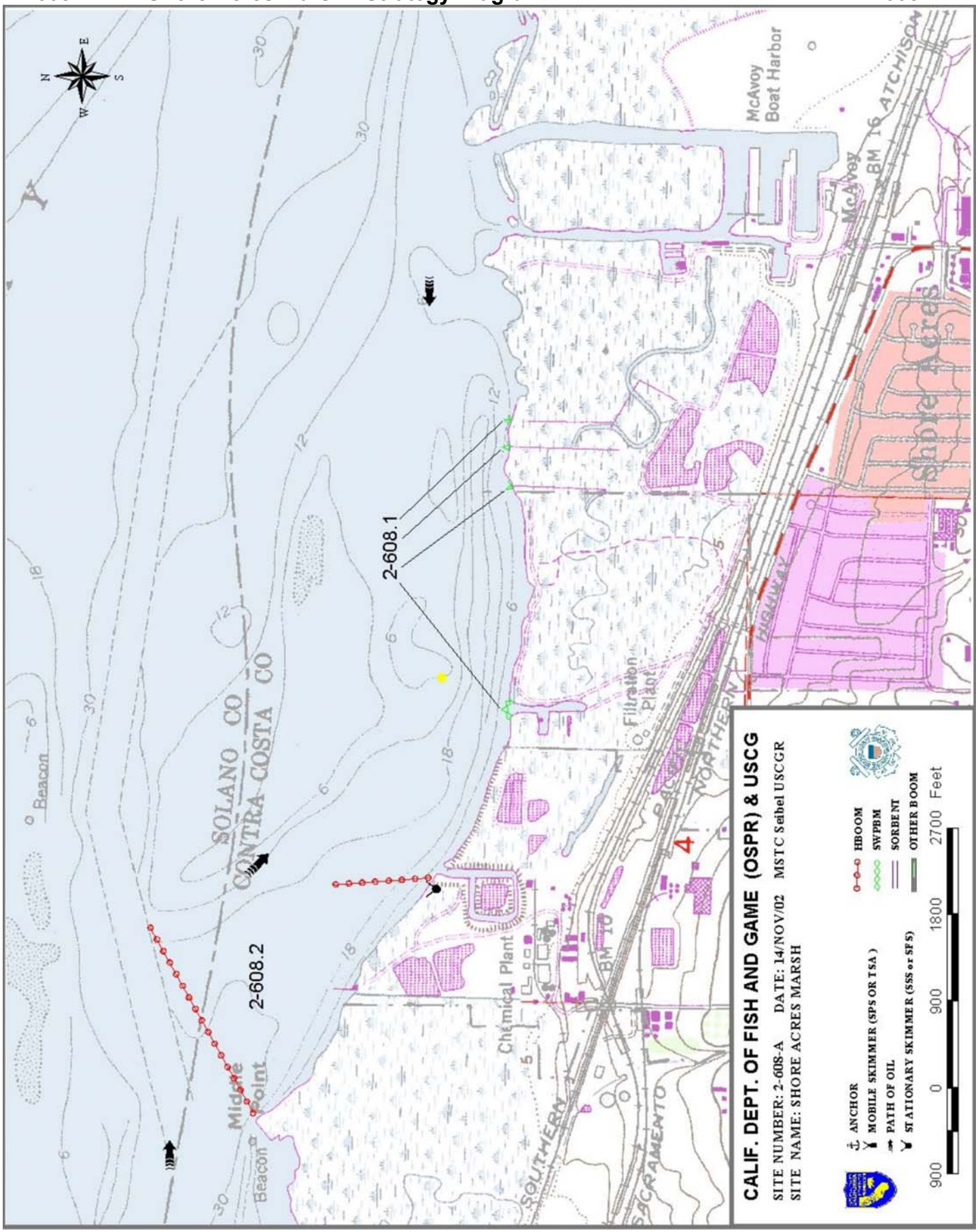
WATER LOGISTICS:

Access limitations: depth, obstructions:	none have been identified.
Boat Launching, Loading, Docking and Services Available:	McAvoy/Harris Marina at Bay Point is immediately to the east. Martinez Marina (9 mi. W). Pitsburg Marina (6 mi. E).

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Deploy from Pittsburg, Martinez or McAvoy's marinas. McAvoy's is possible field post and staging / support site: all manner of facilities, except housing, are available, and area can be secured.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-608-A DATE: 14/NOV/02 MSTC Seibel USCGR
SITE NAME: SHORE ACRES MARSH
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
900 0 900 1800 2700 Feet
2-608.1
2-608.2
SOLANO CO
CONTRA COSTA CO
McAvoy Boat Harbor
Shore Acres
Filtration Plant
Chemical Plant
Middle Point
Beacon
BM 16
BM 10
ATCHISON
SOUTHERN PACIFIC
SACRAMENTO NORTHERN
HIGHWAY

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2-630-B/C Suisun Shoal - Site Summary 2-630 - B/C

County: Solano **GRP:** 6 **Latitude** 38 03.5 **N** **Longitude** 122 06 **W**
USGS: Benicia/Vine Hill **OSPR Map:** 146 147 **Last ACP Update** 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site is the shallow mud bar which begins a half mile east of the Benicia Bridge and continues to Roe Island. The shoal is an extensive mud-sand bar about a mile wide at its widest and over three miles long. Generally the sediments are firm and will support pedestrian activity. During high tides it is a navigational obstruction to all but shallow draft vessels, but during low tides extensive portions are exposed. Intertidal life here is variable depending on local salinity conditions. Waterfowl and shorebirds frequent this shoal to feed and loaf.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
This mudflat has B-level sensitivity when birds are using it for resting and foraging. Otherwise protection is C-level.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
This is a firm sediment mud-sand bar which is habitat for eurihaline species of invertebrates. It is feeding habitat for fish and when exposed, is resting and feeding for waterbirds and shorebirds.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
Waterfowl and shorebirds here are daily transients because it is covered with water for part of each day.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
TB	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 955-7800	
T	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Kent Nelson	CA Dept of Water Resources	(916) 227-7581	

Count Solano **NOAA CHART:** SUISUN BAY 18657/18652 Latitude 38 03.5 N Longitude 122 06 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site is the shallow mud bar which begins a half mile east of the Benicia Bridge and continues to Roe Island.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
The mudflat is very shallow and should be approached with caution, particularly on a falling tide.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to Responders: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
Primary concern is oiling birds which rest and feed on this bar during low tide. Execution of the strategy is at the recommendation of the Wildlife Operations Branch Chief only.

SITE STRATEGIES

Strategy 2-630.1

(USCG Strategic Objective: **10**) **Dates:** SISRS 07/01/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition

Haze birds off exposed bar: Only at direction of Wildlife Branch Chief

Technique Details

This strategy may be executed at the direction of the Wildlife Branch Chief only. Stake and anchor 4 sonic devices along the bar. Attend regularly. Access at other than high tide may require very shallow draft vessel or airboat.

Table of Response Resources

Strategy SO	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	No. skimmers	special equip		deploy staff	tending staff
2-630.1	0				1	4 hazing devices on floating	2	2 PERSONS		frequent checks	10

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
There is no land access. Water access is one mile east from Benicia or Martinez marinas.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
after arrival by boat, you can walk on bar.

WATER LOGISTICS:
Access limitations: depth, obstructions: EXTREME SHALLOW DRAFT AT LOWER TIDES
Boat Launching, Loading, Docking and Services Available: Benicia and Martinez Marinas (1 mi. W).

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Deploy from Martinez Marina, Benicia Marina or Benicia wharf.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

No strategy diagram available

2-631 -A Roe Island - Site Summary 2-631 -A

County: Solano **GRP:** **Latitude** 38 04 N **Longitude** 122 02 W
USGS: Fairfield South, Vine Hill **OSPR Map:** **Last ACP Update** 01/01/2000

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site includes all of Roe Island and is US Navy property. Roe Island is a marshy island in Suisun Bay which is predominantly a high tidal marsh with high seasonal ponds, supporting a rich diversity of marsh plants. The island has never been diked. There are two tidal channels which enable circulate from Suisun Bay to the interior of the island with multiple branches and associated wetlands. There are shallow shoals on east and west ends. Protected margins and channels have emergent vegetation. Most of the shoreline is wave washed and eroding. Contact Concord Naval Weapons Station regarding access and biological information.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
The marsh is "A" priority all year. Sensitive species of plants and animals occur here.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
The island has predominantly high marsh. Most of the shoreline is exposed to wave action and is eroding which are difficult to protect. The tidal channels can convey oil to interior areas. There are several areas around the island margin which are protected from aggressive waves and have emergent marsh vulnerable to oiling (northwest margin and east end.)

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
This site has diverse marsh breeding habitat for a variety of birds including the threatened black rail and the Suisun song sparrow. It is important also to migratory birds and waterfowl.

This is potential habitat for saltmarsh harvest mouse though there are no recorded collections.
Among the rich diversity of plant found here are the rare plants Mason's lilaeopsis and Delta tule pea.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
		Baylands Nature Preserve	(650) 329-2506	
	Peter Baye	U S Army Corps of Engineers	(415) 744-3322	
	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
	Jerry Karr	Vallero Refining Benicia / Audubon	(707) 745-7568	

2-631 - A Roe Island - Site Strategy 2-631 -A

Count Solano **NOAA CHART:** 18656 Suisun Bay Latitude 38 04 N Longitude 122 02 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site includes all of Roe Island and is US Navy property.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Very shallow water around island limits access.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to Responders: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
The prime concern is to exclude oil from entering the tidal channels which lead to the interior. Secondarily, deflect oil away from exposed shoreline where oil will be washed on shore. Minimize trampling of shoreline and marsh vegetation: very small endangered plants are all along the shoreline. This island supports rich and varied plants species, but its high elevation reduces risk of oil reaching the interior of the island except on very high tides.

SITE STRATEGIES

Strategy 2-631.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 05/17/1999 Approved last tested 06/01/1997 ACP date 04/15/2002

Objective or Prevention Condition

06/01/1997

Exclude oil from entering tidal channels and penetrating interior of island.

Technique Details

There are two tidal channels which circulate to the interior of the island with multiple branches and associated wetlands. Exclude oil from tidal channel at Northwest margin by chevron exclusion boom.

A) At the most westerly at northwest side, use 500' swamp (river) boom in a chevron "V" backed with sorbent boom. Water in this area is very shallow: airboat, hovercraft or booming on very high tides will be necessary.

B) On the north side of the island at about the middle of the island, deploy 100 of 8X8+ harbor boom in an exclusion chevron "V" with ends well upstream and down stream from opening. There are pilings around the mouth, and water is fairly deep at and along this opening. Heavier anchors may be required here.

Strategy 2-631.2

(USCG Strategic Objective: **7**) **Dates:** SISRS 05/17/1999 Approved last tested 06/01/2000 ACP date 01/01/2000

Objective or Prevention Condition

06/01/2000

Deflect booming at west end of island.

Technique Details

Deflection Booming: Deploy 3000 of harbor boom in a chevron near the west end to protect vulnerable and sensitive sites at the western end of the island by deflecting oil past the island to north and south. Use heavy anchors (75 lbs.) Deploy boom as close to island as possible: there is a relatively deep channel close to the west tip.

Table of Response Resources

strategy	hboo	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel		SO
2-631.1		600		3/12#+/danforths & stakes	300	0	1		very shallow boat, draft airboat or	2			5
2-631.2	3000			7/75+/danforth + 20 heavy chain		3	1			9	9	2	7

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Access site only by water. Roe Island is located in Suisun Bay north of the USN Concord Naval Weapons Station and is USN property.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
none, access by boat & foot traffic

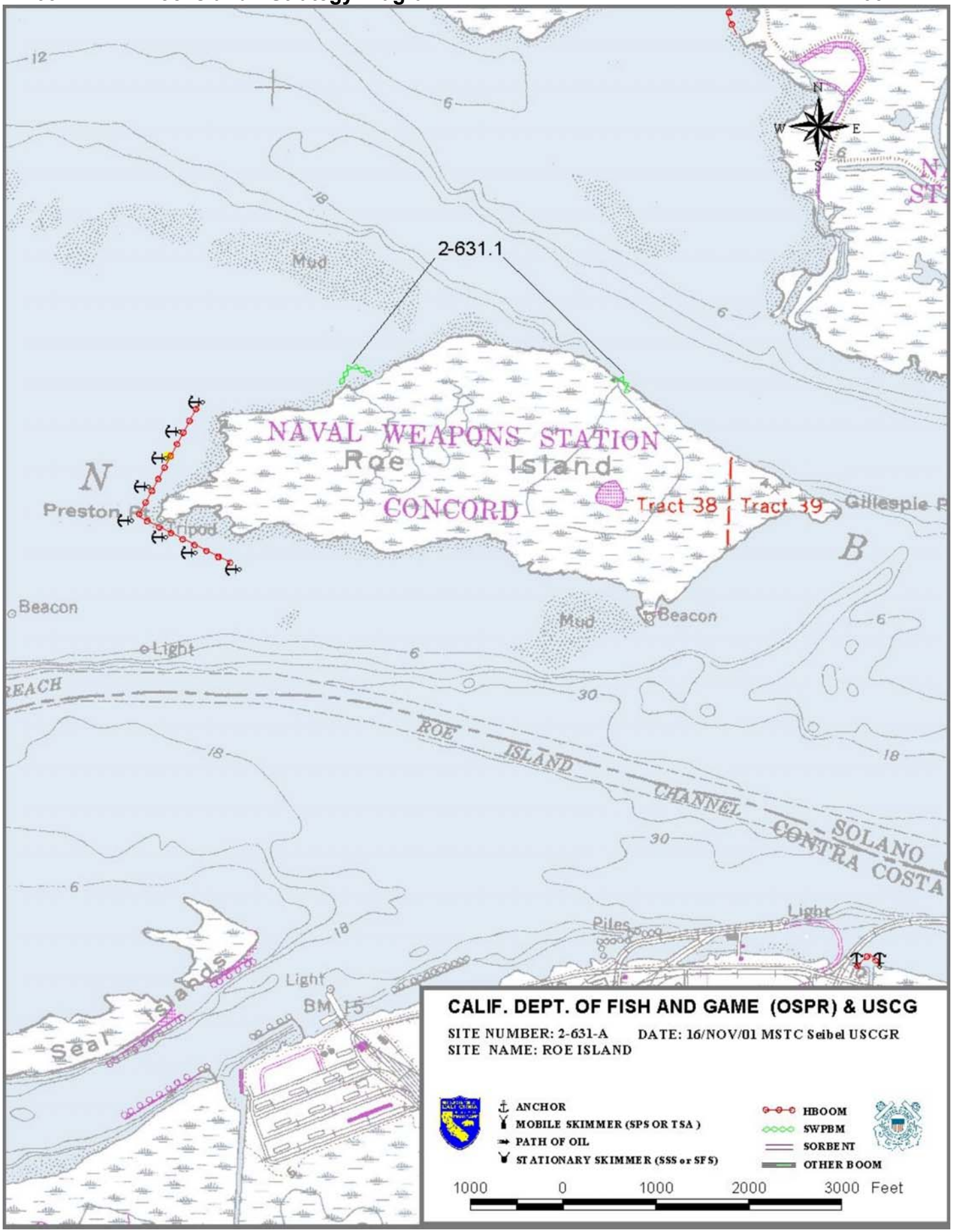
WATER LOGISTICS:

Access limitations: depth, obstructions:	very shallow water at NW and E
Boat Launching, Loading, Docking and Services Available:	Launching at Martinez, Benicia and McAvoy-Harris' Marinas in Bay Point , with boat services. Launch only at Tosco - Pacheco Creek and Concord Navel Weapons Station (tug wharf) by consent only.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Deploy from Martinez Marina, Benicia Marina or from McAvoy/Harris' Yacht at Bay Point (West Pittsburg) depending on the zone of impacts and response activity.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


2-631.1
NAVAL WEAPONS STATION
Roe Island
CONCORD
Tract 38
Tract 39
Preston Pt
Tripod
Beacon
Light
Mud
ROE ISLAND CHANNEL
SOLANO
CONTRA COSTA
Piles
Seal Islands
BM 15
CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-631-A DATE: 16/NOV/01 MSTC Seibel USCGR
SITE NAME: ROE ISLAND
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
1000 0 1000 2000 3000 Feet

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2-632 -A Ryer Island - Site Summary 2-632 -A

County: Solano **GRP:** **Latitude** 38 05 **N** **Longitude** 122 02 **W**
USGS: Vine Hill **OSPR Map:** **Last ACP Update** 01/01/2000

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site includes all of Ryer Island and is a property of the US Navy. This marshy island in Suisun Bay is divided in two parts by a channel. The western end of the island is a high tidal marsh and supports a rich diversity of native marsh plants. It has never been diked or channelized. The west-most tip is wave eroded and is used occasionally as a haulout by harbor seals.

The eastern three-fourths of the island was once diked, and the interior of the island subsided. The dikes are now broken in several places, and because of the subsidence, strong tidal currents fill and empty the interior with every tide. This eastern portion is a flooded maze of tule pockets and channels with a large deep channel running east-west. The outer perimeter of the island has complicated shoreline of small marshy islands and barrow channels. There are mature trees on the levees particularly at the east end.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
The marsh is "A" priority all year. Sensitive plant and animal species occur here throughout the year.

RESOURCES AT RISK

HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
This island has several different habitats which are vulnerable to oil impacts and collateral impacts from response. The west end and the fragmented pieces left when barrow channels were excavated, high marsh habitat. This high marsh is almost undisturbed and uncommon habitat which sustains many native species. The high ground of the levees are upland habitat. The upland sustains shrubs and trees which is uncommon habitat for bird and mammals in the middle of Suisun marsh. Both the high marsh and upland are unlikely to sustain direct oil impacts due to elevation, but are vulnerable at their emergent edges and are vulnerable to trampling, activity and noise disruptions during response. The margins and interior provide extensive emergent marsh. The interior of the east portion is patches of emergent tules and convoluted channels.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
The area is important to migratory waterfowl. It is also prime breeding habitat for marsh birds. Threatened bird species occur here including black rails, endangered California clapper rails, salt marsh common yellowthroat and Suisun song sparrow. A great diversity of passerines and raptors including peregrine falcons use this area as winter habitat.

There is a full suite of aquatic mammals residing here, including the endangered saltmarsh harvest mouse. The west-most tip is occasionally used as a haulout by harbor seals.
Among the rich variety of flora occurring here are rare plants, including Mason's lilaeopsis and Delta tule pea.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	
TB	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 955-7800	
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
T/B	Kathy Hieb	Ca Dept of Fish and Game, Bay/Delta	(209) 942-6078	
T/E/L	Trinidad Huerta	Concord Naval W.S.- Emergency Res	(925) 246-5003	(925) 246-5174
B	Diane Kopec			
B	Dr. Naill McCarten	Botanical Research	(510) 841-8145	

2-632 - A Ryer Island - Site Strategy 2-632 -A

Count Solano **NOAA CHART:** 18656 Suisun Bay Latitude 38 05 N Longitude 122 02 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site includes all of Ryer Island and is a property of the US Navy.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
There are extreme shallows and obstructions around these islands.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
The main concern is the potential for oil to be carried into the interior of the islands particularly eastern Ryer Island: on east Ryer there is a strong flood flow into the island though openings on the north, the south, the east and the west. The north opening and west opening are most likely to have oil entries. Also of concern is the oiling of the emergent vegetation on the margins and surrounding small islands: closing sloughs and openings will reduce the amount of marsh exposed. There are rare plants and threatened species here; so avoid trampling vegetation and trampling oil into sediments.

SITE STRATEGIES

Strategy 2-632.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 05/17/1999 Approved last tested 05/07/2001 ACP date 04/15/2002

Objective or Prevention Condition

Exclude oil from entering east section of Island though levee breaks and penetrating the west section interior via tidal inlets.

Technique Details

Primary concern is excluding oil from **east Ryer Island**. **West Ryer Island** should come after. Most actions require very shallow operations, and at least one very shallow draft boom boat is necessary. Target time is 2 hours for deployment:

On **east Ryer Island** are four major openings and plus some smaller inlets.

A) North off Suisun Cut: Use chevron configuration (600' 9X9+ Hboom with 3 22#+ anchors and stakes) to exclude oil from a large gap in the levee. There are four narrow opening to the east of the break, each requiring 100' of 4X4+ and 1/5#+ anchors and stakes each. Back with sorbent (1000')
-The cross cut island cut may need booming at north end: 200' of 9X9 at the north end. 200' sorbent.
B) West end: All require very shallow operations. Back with sorbent 500.
- Exclude oil from two small opening just east of cross island channel 50' and 100' of 4X4+ each with 1- 5#+ anchor and stakes in a chevron "V" exclusion. Set "V" apex and stakes as far from current opening as possible.
- Exclusion chevron "V" in the larger channel immediately to south, with 350' 9X9+ Hboom with 22#+ anchors & stakes.
- 100 yds south of that location is an opening between along-shore islands, boom with 100' 4X4 river (swamp) boom staked in place. (no sorbent necessary.)
C) South shore: two openings - a wide funnel opening fronted with pilings and submerged pilings: deploy Chevron "V" exclusion with 400' 9X9+ Hboom with anchors to keep boom off the pilings. Back with 200' sorbent. Exclude oil from second opening about 200 yds east: 100' 4X4+ boom. Back with 50' sorbent.
D) East end: Chevron "V" exclusions of four openings though outer fringe islands: two most easterly opening 350' and 150' 9x9+ (both with 22# danforths), two south easterly side 150' and 150' of 4X4+ boom (both with 5#+ mid channel anchors). Back with 600' sorbent.

On **west Ryer Island** are four tidal inlets, which require extremely shallow operations. There is also the south end of the cross Island cut.

E) Near the northwest tip just east of Garnett Pt is a funnel mouth slough: 200' 4X4+ swamp (river) boom staked in place and 100' sorbent.
F) on the south side, Chevron "V" exclusions using 4X4+ boom - 150' at the cross island cut and slough immediately to the west and sloughs immediately to the west and further west 100' at each of three other sloughs. Back with sorbent.

Strategy 2-632.2

(USCG Strategic Objective: **7**) **Dates:** SISRS 05/17/1999 Approved last tested ACP date 01/01/2000

Objective or Prevention Condition

Deflect oil away from seal haulout at northwest tip.

Technique Details Check

deflect oil past north west tip using 400' of 9X9+ Hboom. At least four heavy anchors will be necessary to hold the boom in position in this wave washed area.

Strategy 2-632.3

(USCG Strategic Objective: **5**) **Dates:** SISRS 05/17/1999 Approved last tested ACP date 01/01/2000

Objective or Prevention Condition

Reducing south shore impacts by closing barrow channel inlets.

Technique Details Check here means **" No strategy diagram": (X)**

Closing barrow channel inlets can reduce oil exposure to the south margin by about 1/2. If oil is likely to impact south side of Ryer Island, close openings to barrow channels. 3000' 4x4+ boom with stakes and occasional anchors.

Table of Response Resources

Strategy	hboom	swpbm	xboom	Anchoring			sorb	Bb/skif	No. skimmers	special equip	deploy staff	tending staff	SO
2-632.1	2200	1700		15/22#+& 15/5#+/danforth, 80 stakes	3000	4	3			1 very shallow draft boats & 18 flags	18	2	5
2-632.2	400			4/22+/danforhts + 20'+ chain							3		7
2-632.3	0	3000		5/12+/ anchors + 40 stakes		1	1			boats - very shallow draft	4	daily checks	5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
There is no land access. By water, Ryer Island is located about a mile north of the Naval Weapons Stations piers in Suisun Bay. The Island is about six miles northeast from Martinez and about four miles northwest from McAvoy's. North and south margins are deep. Wherever channels cross old levee, there are obstructions. Interior channels are all very shallow but may be traversed with outboards when tides are high.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates) foot traffic only, and extremely difficult

WATER LOGISTICS:

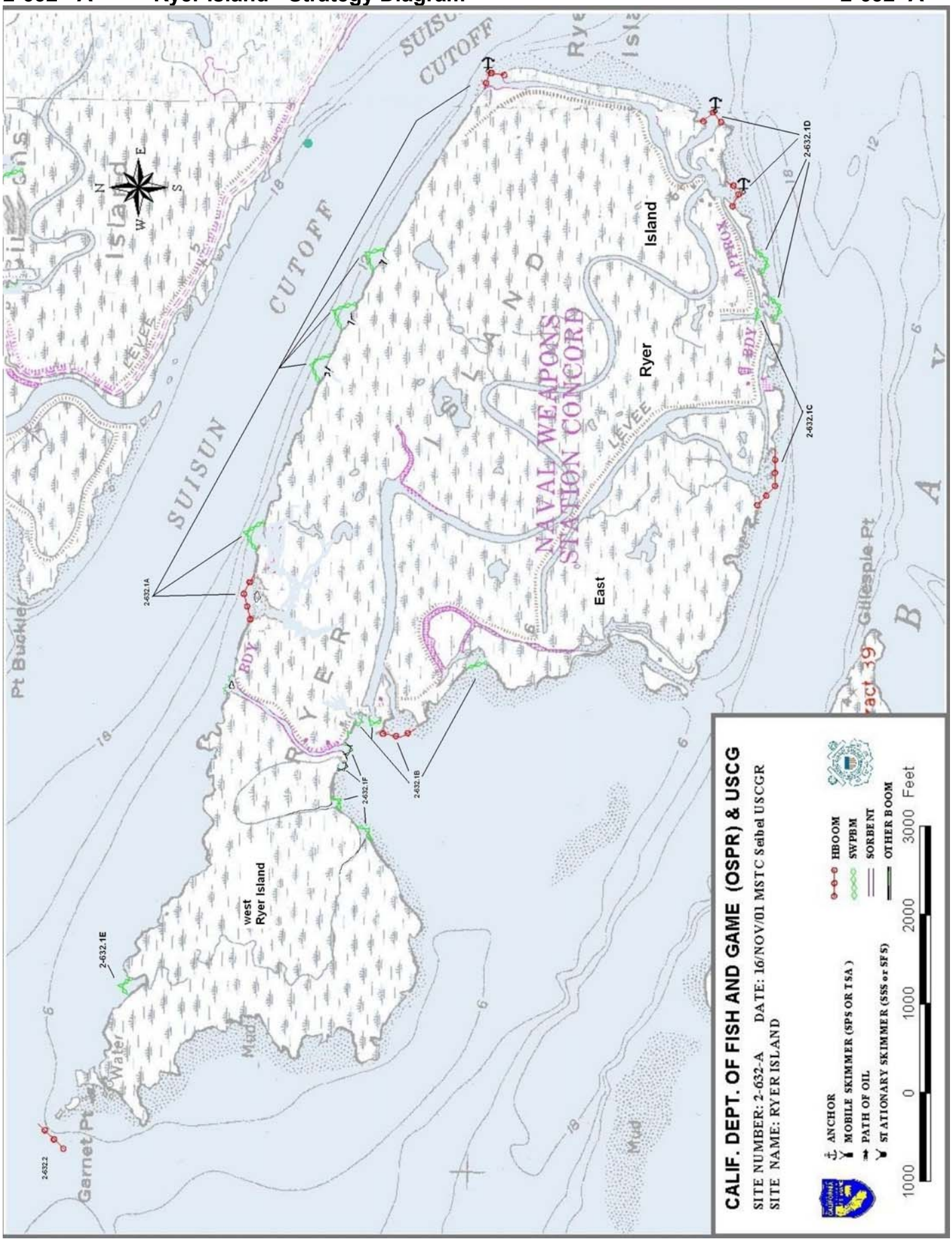
Access limitations: depth, obstructions:	North and south margins deep; channels shallow & obstructions
Boat Launching, Loading, Docking and Services Available:	Nearest launch is McAvoys (4 miles) or Martinez -Benicia (7 miles). All have good services.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Either Martinez, Benicia, or McAvoys (Bay Point) have good facilities for field outposts. All have good support and security potential. Martinez has widest variety of support services.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-632-A DATE: 16/NOV/01 MSTC Seibel USCGR
SITE NAME: RYER ISLAND
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
1000 0 1000 2000 3000 Feet
SUISUN CUTOFF
NAVAL WEAPONS STATION CONCORD
RYER ISLAND
Ryer Island East
Ryer Island West
Pt Buckler
Garnet Pt
Gillespie Pt
2-632.1A
2-632.1B
2-632.1C
2-632.1D
2-632.1E
2-632.1F
2-632.2
BDY
APPROX
LEVEE
Mud
Water

2-633 -A Middle Ground Island - Site Summary 2-633 -A

County: Solano **GRP:** 6 **Latitude** 38 03.7 **N** **Longitude** 121 59 **W**
USGS: Honker Bay **OSPR Map:** 148 **Last ACP Update** 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site is an island in the middle of Suisun Bay between Roe Island and Chipps Island. It is Concord Naval Weapons Station Property. This low island is surrounded by marshy margins. It is the east tip of a long mud shoal named Middle Ground. The west and north side have extremely shallow waters. The south side along the main channel has pilings. The east tip is wave-washed beach.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
All marshes have A-protection priority at all times.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
This is a sandy/mud emerging bar with extensive tule margins on west and east which are suitable for marsh birds and waterfowl. Its size and isolation result in transient use for many species.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
The marshy margins are prime marsh bird and waterfowl habitat. No sensitive bird species have been recorded here.

The emergent marshes here are typical tule-sedge mix.
Several sensitive plants may occur here: Mason's lilaeopsis, Suisun marsh aster.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
TB	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 955-7800	
B	Phillis Faber			
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
EL	Trinidad Huerta	Concord Naval W.S.- Emergency Res	(925) 246-5003	(925) 246-5174
B	Kent Nelson	CA Dept of Water Resources	(916) 227-7581	
BLE	Paul Rankin	Concord Navel W.S. - Environmental	(925) 246-5674	(510) 246-5174

2-633 - A Middle Ground Island - Site Strategy 2-633 -A

Count Solano **NOAA CHART:** SUISUN BAY 18656/18657/18658 Latitude 38 03.7 N Longitude 1219 59 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site is a small island in the middle of Suisun Bay between Roe Island and Chipps Island. It is Concord Naval Weapons Station Property.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
The south side has pilings and submerged pilings. The north and west side are extremely shallow: the island is the emergent tip of a shallow mud bar.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to Responders: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
Oiling of emergent marsh is primary concern. Responders should avoid trampling vegetation because rare plant species are present. Avoid trampling oil into sediments.

SITE STRATEGIES

Strategy 2-633.1

(USCG Strategic Objective: **7**) **Dates:** SISRS 07/01/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition
2ndary priority site: for west side oil threat, deploy deflection boom to the SW from island.

Technique Details
Deploy 1500'8X8+ deflection boom SW from the island with a slight deflection to move oil past island and back into channel.

Strategy 2-633.2

(USCG Strategic Objective: **7**) **Dates:** SISRS 07/01/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition
2ndary priority site: If oil threat from NW, deflect oil from NW shoreline and into channel to north.

Technique Details
Deploy 1500' 4X4+ north and northeast to deflect oil past island and back into north channel. Stake and anchor in place. This area is extremely shallow and only very shallow draft vessels can deploy here and deployment should be scheduled for high tides.

Table of Response Resources

Strategy SO	hboom	swpbm	xboom	Anchoring	sorb	Bb/skif	No. skimmers	special equip	deploy staff	tending staff
2-633.1	1500		4/22#+ danforths & chain	2	1			8	freq checks	7
2-633.2	0	1500	4/12+/danforhs & stakes	1	2			7	frequent checks	7

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
There is no land access. Water access only: the site is one mile northwest from McAvoy's Marina at channel marker G 21.

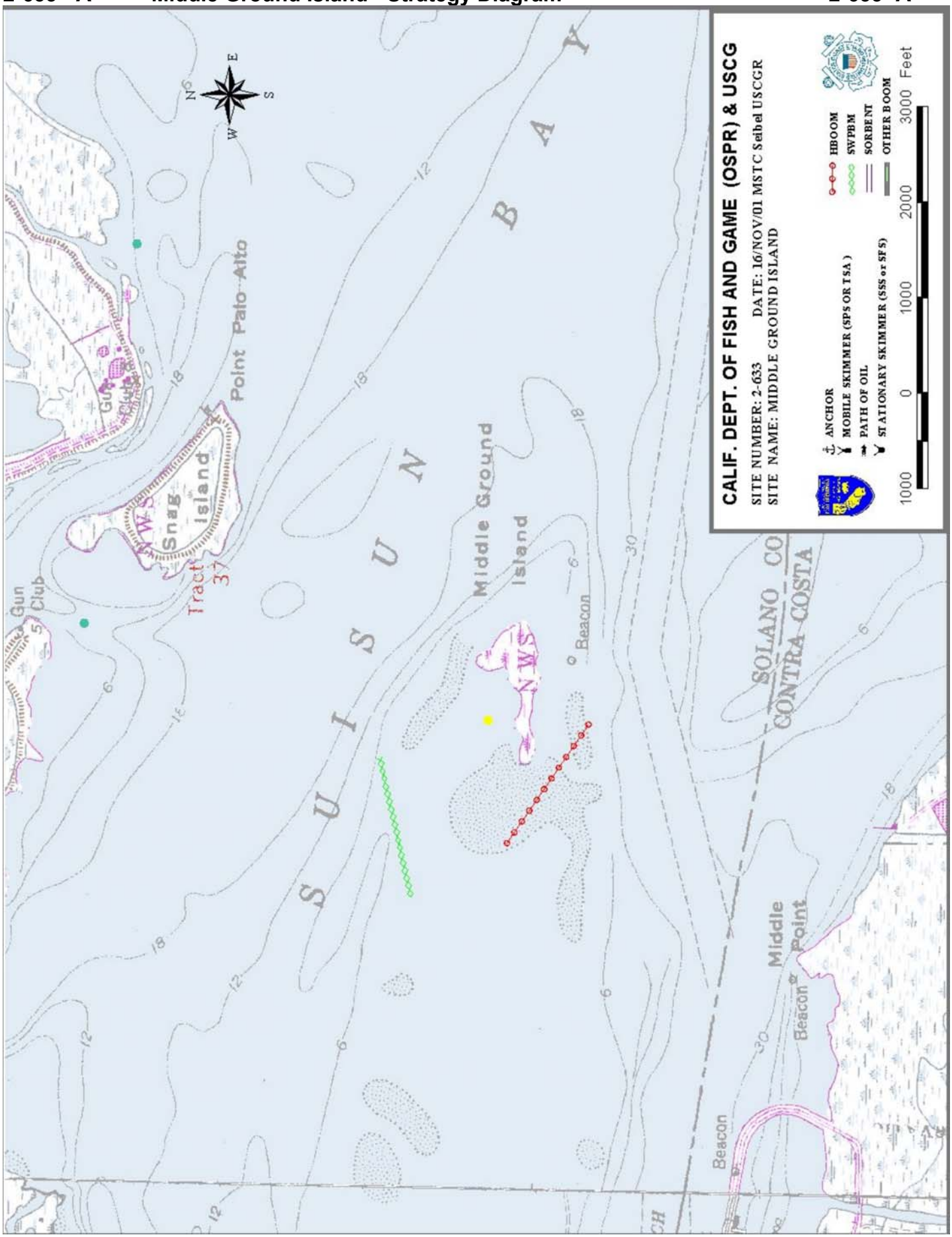
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
no land access. foot traffic at site only.

WATER LOGISTICS:
Access limitations: depth, obstructions: Extreme shallows. Beware of pilings.
Boat Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point is immediately to the east. Martinez Marina (9 mi. W). Pittsburg Marina (6 mi. E).

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Deploy from Pittsburg, Martinez or McAvoy's marinas. McAvoy's is possible field post, as well as a re-supply point. All manner of facilities, except housing, are available. Area can be secured.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-633 DATE: 16/NOV/01 MSTC Seibel USCGR
SITE NAME: MIDDLE GROUND ISLAND
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
1000 0 1000 2000 3000 Feet
SUISUN BAY
Middle Ground Island
Snag Island
Point Pato Alto
Gun Club
Tract 37
Beacon
Middle Point
SOLANO CO
CONTRA COSTA
N
S
E
W

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2-651 -A Southampton Bay - Site Summary 2-651 -A

County: Solano **GRP:** **Latitude** 38 04 N **Longitude** 122 11 W
USGS: Benicia **OSPR Map:** **Last ACP Update** 01/01/1994

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
The site extends from Dillon Point to the unnamed point (with dwellings) just west of Commodore Jones Point. Southampton Bay is shallow bay open to Carquinez Strait with a large prograding wetland. The bay is very shallow and is an extensive mudflat at low tides. The margin of the bay is tule-sedge. The back marsh is saltgrass and pickleweed grading to freshwater marsh in those portions receiving freshwater flow from the surrounding drainage and creek. Most of the site is Southampton State Park though some is in private or roadside right-of-way in the most easterly portion. Remnants dikes in the easterly mudflats are covered with water except at low tides.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
The marshes are an "A" priority all year.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
This is a large tidal marsh (20+ acres) fed by a stream from land and a tidal slough. The marsh is saltmarsh in the front and freshwater marsh in the rear. There is high ground around the margins. The entire marshfront has extensive mudflats which are exposed for a hundred+ yards at lower tides.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
The marshes are habitat for the endangered California clapper rail, the threatened California black rail. This is breeding habitat and wintering habitat for many species. In the winter, canvasback ducks are common.

The endangered salt marsh harvest mouse probably occurs here.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
L	City Of Benicia			
E	NorCom DISPATCH	CA DEPT OF PARKS AND RECREATION	(916) 358-1300	
B	Phillis Faber			
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
B	Jerry Karr	Exxon Oil	(707) 745-7568	
ELBO	Park HQ	Benicia State Recreation Area	(707) 938-1519	

2-651 - A Southampton Bay - Site Strategy 2-651 -A

Count Solano **NOAA CHART:** 18656 Suisun Bay Latitude 3 8 04 N Longitude 122 11 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
The site extends from Dillon Point to the unnamed point (with dwellings) just west of Commodore Jones Point.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
The bay is extremely shallow at its margins and recesses. There is a remnant of an old dike extending from the land to the east side of the bay (near the dwellings).

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to Responders: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
This very shallow bay has extensive sensitive marshy shoreline, which if oiled, would be nearly impossible to clean or rehabilitate. The intent is to keep oil out of the bay by deflection or, failing that, by exclusion/protection booming along the marshfront. Respond in shallows

SITE STRATEGIES

Strategy 2-651.1
(USCG Strategic Objective: **7**) **Dates:** SISRS Approved last tested ACP date 01/01/1995

Objective or Prevention Condition
Deflect boom past the site on the current contour line.

Technique Details
Deflection Booming: To keep oil in the main channel where it is accessible to the skimmers, deploy 1200 ft of deflection boom extending easterly along the 20 foot depth from Dillon Point to deflect oil away from Southampton Bay and back into Carquinez Strait on the flood tide. Deflection boom should also be deployed to the east of Southampton Bay to deflect oil away from the Bay and into Carquinez Strait during the ebb tide. Benicia Point appears to be a logical location from this boom. Recommended 600 ft of boom be deployed along the southeast side of the islands off this point and extend 600 ft northwesterly (285-T) from Daymark #23 along the

Strategy 2-651.2
(USCG Strategic Objective: **8**) **Dates:** SISRS Approved last tested ACP date

Objective or Prevention Condition
Protective booming of marshy exposure. The main focus of protection should be the inner marsh.

Technique Details
Deploying sorbent boom deep into Southampton Bay with shallow water craft. In addition, an alternate strategy would be to deploy exclusion boom (swamp boom or tidal barrier boom) between the vicinity of Dillon Point and the eastern shore of Southampton Bay. It is estimated that 3.200 to 5,000 ft of boom would be required to exclude oil from the wetlands of Southampton Bay. A strategy for deployment of exclusion boom can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California (Hayes and

Strategy 2-651.3
(USCG Strategic Objective: **6**) **Dates:** SISRS Approved last tested ACP date

Objective or Prevention Condition
Shoreline containment and recovery

Technique Details
The small cove immediately west of Dillon Pt. appears to be a potential containment and recovery site. Oil and debris on the gravel beach indicate it is a natural collection point, and there is vehicle access to the beach. To assist natural collection at this point, 300 ft of deflection boom extending westerly from Dillon Pt. (Daymark #21) during the flood tide or easterly from the small unnamed point approximately 1000 ft west on the ebb may be beneficial. These short lengths of boom should be set so as to direct oil into the cove. Oil may be recovered from the water with a Shore side Skimming System (SSS) such as an oil-mop skimmer and pumped to a fast

Table of Response Resources

Strategy SO	hboom	swpbm	xboom	Anchoring	sorb		Bb/skif	No. skimmers	special equip	deploy staff	tending staff
2-651.1	1200		3/22+/danforths + chain	2	1				8	daily checks	7
2-651.2	0	5000	6/22+/danforhts + chain & stakes	3000	3	2		Bboats: very shallow draft	13	2	8
2-651.3	300		2/22+/danforth + chain		1	1	1 SSS		4	skimming crew	6

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
By boat, proceed 3 miles west from Martinez Marina. By land, take the Columbus Parkway Exit off Hwy 780 and drive into Southampton Bay State Park on the south side of the freeway. There is a park roadway that goes to Dillon point.

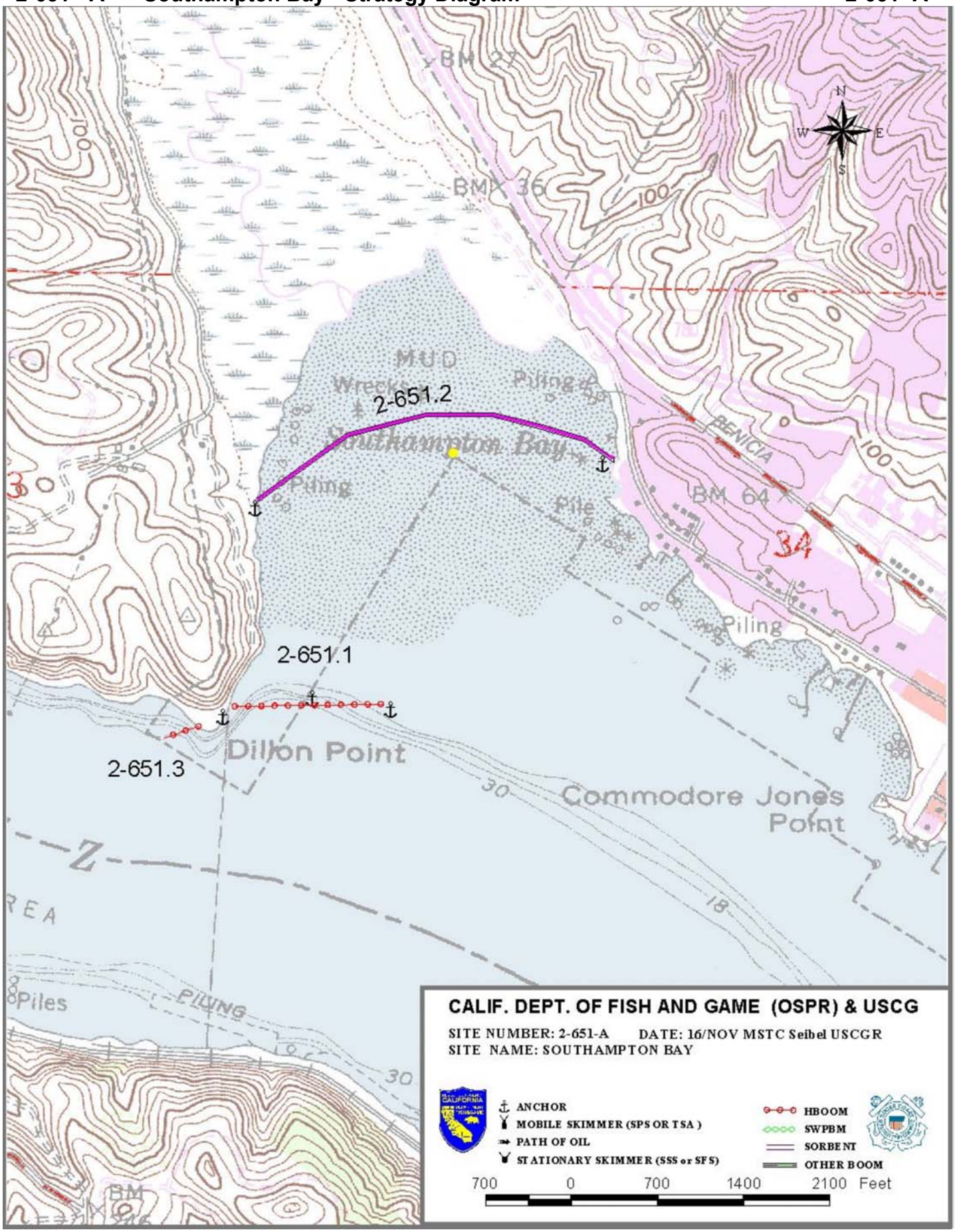
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
paved road around perimeter. Foot only in marsh.

WATER LOGISTICS:
Access limitations: depth, obstructions: Extremely shallow and obstructions
Boat Launching, Loading, Docking and Services Available: Nearest launch is at Benicia public ramp 1/4 th mile east. Launch, fuel, boat services, moorage at nearby marinas at Martinez, Benicia, Crockett.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging locales: on-site at Dillon Pt, or Benicia public boat ramp. Staging areas at Benicia, Martinez, Exxon Wharf. Support services: lodging and food available at Martinez or Benicia.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


BM 27
BM 36
100
MUD
Wrecks
Piling
2-651.2
Southampton Bay
Piling
Pile
BENICIA
BM 64
34
100
Piling
2-651.1
2-651.3
Dillon Point
30
Commodore Jones Point
Z
18
REA
Piles
PILING
30
BM
N
W
E
S
CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-651-A DATE: 16/NOV MSTC Seibel USCGR
SITE NAME: SOUTHAMPTON BAY
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
700 0 700 1400 2100 Feet

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2-652 -A Benicia Marsh - Site Summary 2-652 -A

County: Solano **GRP:** 6 **Latitude** 38 02.7 N **Longitude** 122 09.7 W
USGS: Benicia **OSPR Map:** 146 **Last ACP Update** 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site extends from the foot First Street, Benicia, and continues to the east to the Benicia Warf. The site is on both sides of the Benicia Marina. This is an elongated pickleweed-saltgrass marsh. The front of the marsh has a beach berm which separates the marsh behind from all but highest tides. Tidal prism is small. There are several small tidal inlets which are mostly obstructed with vegetation. There is also a tide gate on the marina breakwall which admits tidal exchange to the marsh from the marina to the tug pier at 5th Street. The marsh front is sedge mix; the main marsh is saltgrass and pickleweed. Ownerships include City and private holdings.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
Marshy areas have A-protection priority at all times.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
The outer marsh margin is a storm berm which has mostly sedges and rushes. The back marsh is mostly pickleweed with saltgrass. The outer margin is a combination of wave-washed eroded shoreline and pocket beaches. About half the shoreline has shallow tidal flats, particularly the east half.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
The marshy margins and inner marsh are habitat for marsh bird and waterfowl year-round. Suisun song sparrow and Suisun common yellowthroat have been found in this vicinity. There are always about a hundred mallard ducks and a dozen Canada geese present at the west end. During the winter, there are typically 400-1000 golden eye and scaup species and other water birds rafting between the tug dock and the wharf.
Typical semi-aquatic marsh mammals use this area. Saltmarsh harvest mouse may occur here.
Sensitive plants may occur here: Suisun marsh aster.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
LE	City Of Benicia			
LE	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 955-7800	
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
B	Kent Nelson	CA Dept of Water Resources	(916) 227-7581	
B	Mary Shaw	California Native Plant Society - Solano Pres	(707) 747-5481	

2-652 - A Benicia Marsh - Site Strategy 2-652 -A

Count Solano **NOAA CHART:** SUISUN BAY 18657/18652 **Latitude** 38 02.7 **N** **Longitude** 122 09.7 **W**

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site extends from the foot First Street, Benicia, and continues to the east to the Benicia Warf. The site is on both sides of the Benicia

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
This shoreline is shallow and has obstructions.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
Primary concern is transport of oil to inner marsh and oiling of emergent marsh front. The strategy is to close the few small tidal inlets. If oil is crowded along shore, the marsh front may need protective booming or be used to collect at the designated locales. Avoid trampling marsh vegetation or tracking oil into marsh front or sediments.

SITE STRATEGIES

Strategy 2-652.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition
Exclusion boom tidal inlets.

Technique Details
There are a half dozen small, low current tidal inlets. Each can be closed by staking 10' or 20' boom segments with sorbent backing deployed by a team on foot from land or water. There is also a tide gate on the east Benicia Marina channel bulkhead which must be closed to exclude oil from the marsh to the east. An alternative measure is to close tidal inlets with fill (which requires notification of BCDC and US Corps Engineers).

Strategy 2-652.2

(USCG Strategic Objective: **6**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition
Deflection to collection: If oil is near shore due to spill origin or wind, this is a good area for diversion to shore for capture and recovery.

Technique Details
There are good shore capture points at 1st St, E 5th St, and at E 6th St (inside industrial property) Deploy multiple layers of 1000'4X4+ at an angle to shore to ground the oil and collect using Shore side Skimming Systems (SSS). There is an artificial embayment at E 6th with a road to its margin, making it an excellent collection site. The tug dock at East 5th St is an alternative collection site; it is very shallow inland from the tug mooring, and there is little current. East 1st St has paved access to water, but collection is more difficult

Strategy 2-652.3

(USCG Strategic Objective: **8**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition
Protective booming of entire marsh front: When heavy or continuous reoiling is imminent and deployment will not preempt other actions.

Technique Details **Check here means " No strategy diagram": (X)**
Set 4X4+ boom and sorbent boom as close to marshfront as possible with available shallow draft vessels. Stake and anchor in place. This strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994).

Table of Response Resources

Strategy SO	hboom	swpbm	xboom	Anchoring		sorb	Bb/skif	No. skimmers	special equip	deploy staff	tending staff
2-652.1	0	150	20 stakes	150					2	occasional	5
2-652.2	0	2000	4/12+/danforhts and stakes			1 SSS	Bboats: very shallow draft		6	check +	6
2-652.3	0	5000	8/22+/danforths & stakes	1000	2	1	Bboat: very shallow draft		8	regular	8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
There is land access from I-780: exit at either East 5th Street and proceed to Bay or exit at East 2nd Street and proceed via First Street to bay front. Water access: the site is on both sides of the Benicia Marina breakwater across from Martinez Marina.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
ALL TYPES AT ACCESS POINTS, ELSE FOOT

WATER LOGISTICS:
Access limitations: depth, obstructions: SHALLOW DRAFT AT SHORE
Boat Launching, Loading, Docking and Services Available: Benicia Marina on site. Martinez Marina (1 mi. S).

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Stage at Martinez Marina, Benicia Marina or Benicia wharf. Full services are available in both communities.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems X Radio X Pager X Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-652-A DATE: 16/NOV/01 MSTC Seibel USCGR
SITE NAME: BENICIA MARSH
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
600 0 600 1200 1800 2400 Feet
2-652.2
2-562.1
tide gate
Sewage Disposal
Benicia Shoals
BENICIA

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2-654 -A Goodyear Marsh - Site Summary 2-654 -A

County: Solano **GRP:** 6 **Latitude** 38 04 **N** **Longitude** 122 07 **W**
USGS: Benicia/Vine Hill **OSPR Map:** 146 **Last ACP Update** 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site begins near the Benicia Bridge and continues for about three miles to Suisun Slough. This site is a partially diked wetland with an encroaching emergent tule marsh on its bayward margin. The most of marsh behind the levee is a California State wildlife refuge (part of Grizzly Island Wildlife Refuge system), and is a combination of pickleweed and tule/sedge. The historic levee is open at several locations, and one creek, Sulfur Springs Creek, flows through it from the industrial park inland. The accreting marshfront is extremely shallow and is a successional cline from mudflats to tule marsh to tule thicket. In some places the accreting tule marshfront is over a hundred yards wide.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
This marsh has A level protection priority at all times.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
This marsh has high priority at all times. The foremost concern is spread of oil to the inner high marsh though tidal channels and Sulfur Springs Creek. Oiling of the emergent marsh margin and frontage is of similar importance.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
Waterfowl, shorebirds and marsh birds use this area for breeding and feeding and wintering, and the site is managed as a waterfowl refuge.
Bird Sensitive Species include threatened black rail, endangered California clapper rail, Suisun common yellowthroat and Suisun song sparrow.

The endangered Saltmarsh harvest mouse and a wide variety of semi-aquatic mammals occur here including: muskrat, beaver, mink, river otter, raccoon.
Special Status plant species occurring here include Suisun marsh aster and Delta tule pea.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 955-7800	
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
BTEL	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
TB	Jerry Karr	Vallero Refining Benicia / Audubon	(707) 745-7568	
B	Kent Nelson	CA Dept of Water Resources	(916) 227-7581	
B	Mary Shaw	California Native Plant Society - Solano Pres	(707) 747-5481	

2-654 - A Goodyear Marsh - Site Strategy 2-654 -A

Count Solano **NOAA CHART:** SUISUN BAY 18657/18652 Latitude 38 04 N Longitude 122 07 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site begins near the Benicia Bridge and continues for about three miles to Suisun Slough.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
The marsh is fronted by very shallow mudflats.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
This is a very sensitive site with endangered species. Because of the shallows and great sensitivity it will be extremely difficult to cleanup or rehabilitate. The two main concerns are oiling of the inner marsh via Sulfur Springs Creek and openings to inner sloughs. The more difficult problem is oiling and cleanup disturbance of the marshy margin. Avoid trampling marsh vegetation or tracking oil into marsh front or sediments. Large portions of this site are California Department of Fish and Game Wildlife Refuge.

SITE STRATEGIES

Strategy 2-654.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 07/06/1997 Approved last tested 04/11/2000 ACP date 09/04/1997

Objective or Prevention Condition 04/11/2000

Exclude oil from all tidal sloughs, inlets, and Sulfur Springs Creek to keep oil out of back marsh.

Technique Details

Stake and anchor 100'4X4 boom in chevron at mouth entry points: Sulfur Springs Creek, opening just north of Mothball pier, and opening at north end. Back with sorbent boom. This is extremely shallow water and will require action at high tide or with airboat or

Strategy 2-654.2

(USCG Strategic Objective: **6**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition

Deflect to collection: When heavy oiling/re-oiling is a threat on incoming tide with a southerly wind, intercept along shore oil and direct to collection.

Technique Details

Divert moving oil to collection skimming. Deploy 1000' 8X8' in deep water and 1000' 4X4+ boom in shallows to drive oil to shore. Set up Shoreside Skimmer near or at shore to collect near foot of Benicia Bridge. If oil is traveling off shoreline, set boom to deflect oil away from shore to main channel to floating skimmer. Repeat at mothball pier as necessary. Waters near shore area very shallow which may necessitate assistance from shore.

Strategy 2-654.3

(USCG Strategic Objective: **8**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition

Protective Booming: If oil continues to threaten marshfront, deploy protective booming as recommended in SF Inlet Study by RPI/MSRC

Technique Details Check here means **" No strategy diagram": (X)**

If it appears that foregoing strategies will not keep oil out of wetlands, deploy exclusion booming along marsh front: this strategy for deployment can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994). This requires 27,000' of Hboom or tidal barrier boom or swamp boom.

Table of Response Resources

strategy	hboo	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel		SO
2-654.1	0	300		3/5#+ anchor and stakes			1		one airboat/hovercraft/shallow boat	2	2 PERSONS	frequent checks	5
2-654.2	1000	1400		4/22+/danforths + chain & stakes	100	2	2	2	SSS/SPS Bboats: very shallow draft	8	PERSON	skimming and	6
2-654.3	0	27000		20/12+/danforth & stakes		8	2		Bboats: very shallow draft	28	28	2x daily check	8

LOGISTICS

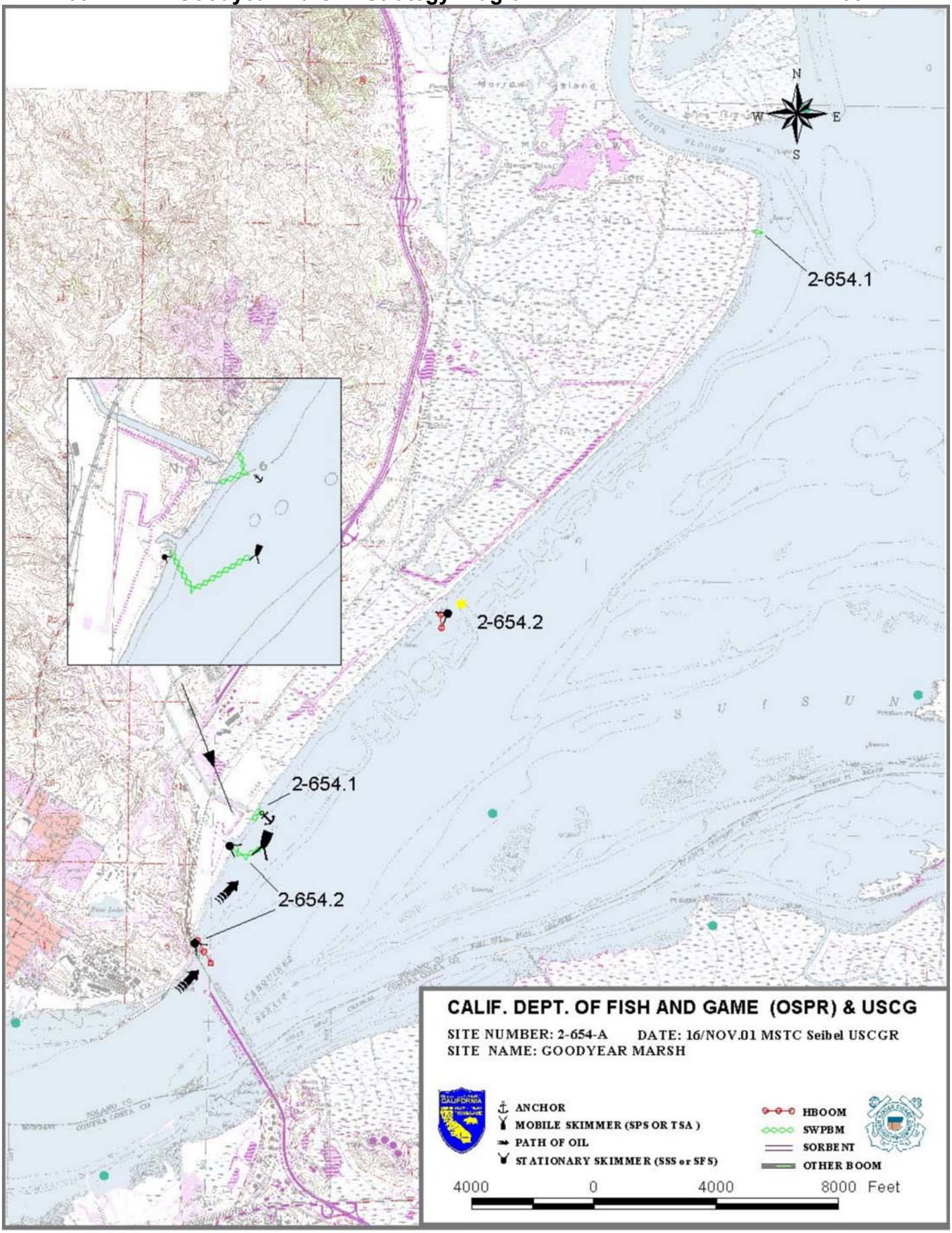
DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
There is land access from I-680 by exiting at Industrial Park or a Lake Herman and proceeding toward the water. The land access is to a limited exposure of the marsh front. Water access is one mile north east from Benicia or Martinez marinas.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
ALL ON ROADS/PIER. FOOT ONLY OTHERWISE

WATER LOGISTICS:
Access limitations: depth, obstructions: EXTREME SHALLOW DRAFT AT LOWER TIDES
Boat Launching, Loading, Docking and Services Available: Benicia and Martinez Marinas (1 mi. to W from site).

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Deploy from Martinez Marina, Benicia Marina or Benicia wharf. The mothball fleet wharf is also an all-service pier with crane. Stage at Martinez Marina, Benicia Marina or Benicia wharf. Full services are available in both communities.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone


N
W
E
S
2-654.1
2-654.2
2-654.1
2-654.2
CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-654-A DATE: 16/NOV.01 MSTC Seibel USCGR
SITE NAME: GOODYEAR MARSH
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
4000 0 4000 8000 Feet

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2-655-A Joice Island, Suisun Slough, and Montezuma Slough -Site Summary 2-655-A

County: Solano **GRP:** **Latitude** 38 08 **N** **Longitude** 122 04 **W**
USGS: Fairfield South, Vine Hill **OSPR Map:** **Last ACP Update** 01/01/1994

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site includes the mouth of Suisun Slough and Montezuma Slough and the marshy tip of Joice Island at the northeast corner of Grizzly Bay. Between the two slough mouths is Joice Island. The southern tip of Joice Island is undiked marshland with numerous channels connect it with Grizzly Bay. While the marshy tip is a large natural wetland, the greater concern is the strategic importance of these two great tidal sloughs. These two sloughs are the main tidal avenue for all of Suisun Marsh, the largest wetland of California. These two waterways could become conduits for oil conveyance to the extremes of Suisun Marsh. There are miles of branching channels between the diked marshes and at times when tide gates are open (particularly in the fall and winter) to the vast acres of duck club and wildlife refuge marshes behind the island levees. Most of Suisun Marsh is owned by duck clubs or is part of the Californian Department of Fish and Game Grizzly Island Wildlife Refuge system. Joice Island has become a public property and is being operated for marsh research.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
The marsh is "A" priority all year. The area supports endangered species and is very important to migratory waterfowl.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
Primary habitats at risk are those up-channel which would be threatened if oil were to enter the sloughs. The marsh at the tips of Joice and Grizzly Islands is unleveed and in a near natural state. The margins of Montezuma and Suisun Slough are emergent marsh.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
The area is of major importance to migratory waterfowl and to marsh bird and waterbird breeding. Special Status Species include endangered California clapper rail, threatened black rail, Suisun song sparrow, and saltmarsh common yellowthroat. An even wider variety of waterfowl, waterbirds, shorebirds, passerines, raptors, and other birdlife winter here.

The saltmarsh harvest mouse is found throughout these marshes. Semiaquitic species like mink, otter, beaver, etc,, occure thoughout the area. endangered fish, including delta smelt and winter run chinook pass though these waters.
Several rare plants also live here: delta tule-pea, (Lathyrus jepsonii spp jepsonii), soft bird's beak (Cordylanthus mollis ssp. mollis), and Suisum aster (Aster chilensis var. lentus)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
BTEL	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
B	Jerry Karr	Exxon Oil	(707) 745-7568	
B	Jan Knight	US Fish and Wildlife Service	(916) 978-4866	
B	Mary Shaw	California Native Plant Society - Solano Pres	(707) 747-5481	

2-655-A Joice Island, Suisun Slough, and Montezuma Slough -Site Strategy 2-655 -A

Count Solano **NOAA CHART:** 18656 Suisun Bay Latitude 38 08 N Longitude 122 04 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site includes the mouth of Suisun Slough and Montezuma Slough and the marshy tip of Joice Island at the northeast corner of Grizzly

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Shallows.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
This site is the mouths of Suisun Slough and Montezuma Slough where oil entry would result in exposure to miles of marsh. Between these two slough mouths is sensitive marsh with small tidal channels leading into the unleveed marsh. The objectives in order of importance are: 1) are to exclude oil from entering the major sloughs, 2) to close the small tidal sloughs near the mouths of the big channels, and 3) to protect exposed margins from oiling. Responders should avoid trampling marsh vegetation and tracking oil into marsh

SITE STRATEGIES

Strategy 2-655.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 01/01/1994 Approved last tested ACP date 01/01/1994

Objective or Prevention Condition

Exclude from minor and major sloughs: deflect to collection Suisun and Montezuma Slough mouths and chevron exclusion at tidal inlets.

Technique Details

A) At Suisun and Montezuma Slough mouths: exclude oil by deflection to collection. From the shoreline, deploy collection boom arms to collection by stationary floating skimmer (SFS) positioned in the channels. About 2000 ft of 8X8+ harbor boom will be needed for Suisun Slough and about 1700' for Montezuma Slough

B) At the tip of Joice Island, there are nine or more tidal inlets to the marsh at the tip of Joice Island between Montezuma and Suisun Sloughs. To exclude oil, deploy swamp boom (4X4+) in a chevron "V" outside the mouth of each opening: anchor the midpoint and stake or anchor the ends
at the shoreline outside the channel mouths. 50' lengths will be needed for most openings.

Strategy 2-655.2

(USCG Strategic Objective: **8**) **Dates:** SISRS 01/01/1994 Approved last tested ACP date 01/01/1994

Objective or Prevention Condition

Protective booming of undiked tip of Joice Island

Technique Details Check here means **" No strategy diagram": (X)**

Protective Booming: If it appears that other strategies will not keep oil out of the wetlands recommend that exclusion boom be deployed along the face of the marsh where feasible. The portion of Joice Island lying between the entrances to Suisun and Montezuma Sloughs is a high priority for such protection. It is estimated that 8,000 to 9,000 ft of exclusion boom will be required to exclude oil from the undiked wetlands at the south end of Joice Island. A strategy for deployment of exclusion boom is illustrated in Potential Oil-spill Protection Strategies for San Francisco Bay, California (Hayes and Montello, 1994)

Table of Response Resources

strategy	hboo	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel		SO
2-655.1	3700	800		9/22+/danforths + chain	6	2	2 SFS		14	12-15		5
2-655.2	9000			15/22+/danfroths + chain	10	2			30	30	2	8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Access by water only. If launching from Benicia/Martinez, proceed northeast past the Reserve Fleet and into northwest corner of Grizzly Bay. From Pittsburg,, go northwest via Suisun Cut to Grizzly Bay and on the Montezuma. From Suisun/Fairfield, travel down Montezuma or Suisun Slough to their mouth on Grizzly Bay.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
no land access except by foot.

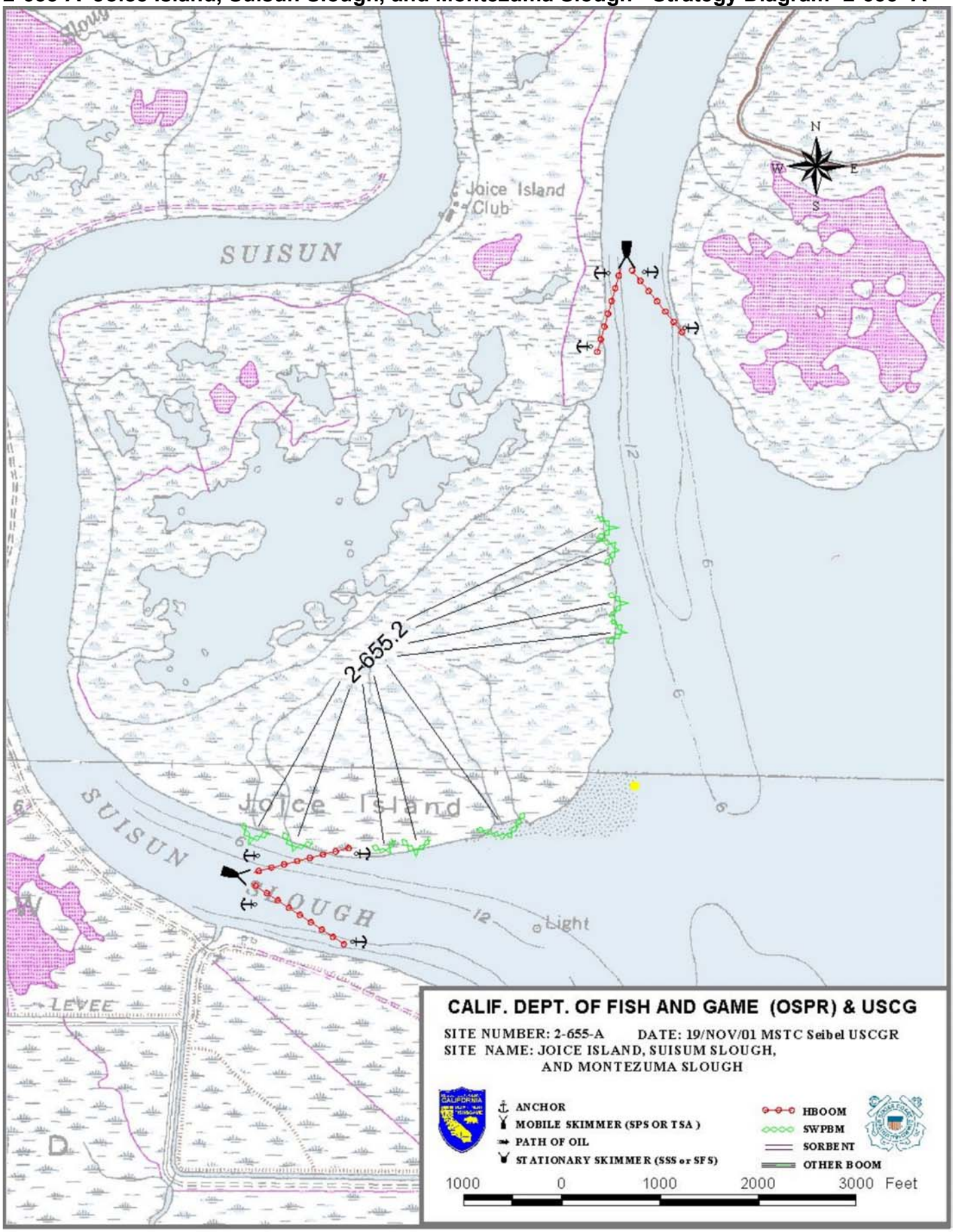
WATER LOGISTICS:

Access limitations: depth, obstructions:	no limitations except shallow margins.
Boat Launching, Loading, Docking and Services Available:	launch, fuel, moorage at Benicia & Martinez Marinas and City of Suisun. Also, lauch ramp at nearby Pearce's harbor.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Best staging at Martinez or Benicia sites.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cellphone

2-655-A Joice Island, Suisun Slough, and Montezuma Slough - Strategy Diagram 2-655 -A



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2-660 -A Grizzly Bay - Site Summary 2-660 -A

County: Solano **GRP:** **Latitude** 38 08 N **Longitude** 122 02 W
USGS: Fairfield South, Denverton **OSPR Map:** **Last ACP Update** 01/01/1994

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site includes all of Grizzly Bay and the shoreline perimeter from the mouth of Montezuma Slough to Pt. Buckner. This bay is very shallow and averages less than six feet deep. It is heavily used by waterbirds, especially in the wintering period. There are about 20 open water duck blinds scatted on the bay. The entire shoreline is marshy. The margins have three kinds of marsh habitat: prograding marsh which is difficult to clean or rehabilitate, eroding shores, and tidal inlets and barrow channels which have extensive exposure. Levees are relatively near the north shore (Grizzly Island) and south shore (Simmons Island). However, the northeast margin is a prograding shoreline; the tidal flats are 1000 yards wide, and the marsh between the levee and mudflat is 500 yards wide. Most of the shores are owned by adjacent duck clubs.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
The marshes are "A" priority all year. There are thousands of waterfowl on the open waters of Grizzly Bay during the winter.

RESOURCES AT RISK

HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
There are three habitats of concern. Foremost is the open water of Grizzly Bay which is an important area for waterfowl to raft in during the winter and spring. Of equal concern is the marshes along the margin. The prograding marsh at the northeast would be difficult to clean or rehabilitate. The remaining marshy margins are eroding shores and tidal inlets and barrow channels which have extensive exposure. There are also extensive infauna communities in the mudflats and bottoms.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
This area is of major importance to migratory waterfowl. At the peak of the wintering period, vast numbers of waterbirds rest and feed on Grizzly Bay, when 100,000 ducks is not uncommon. Waterfowl and marsh birds use the shoreline year-round, including the endangered California clapper rail, the threatened black rail, Suisun song sparrow, and saltmarsh common yellowthroat.

The endangered saltmarsh harvest mouse and the ornate shrew are among the wide variety of mammals found here.
Several rare plants also live here: delta tule-pea, soft bird's beak, Suisun aster.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	
LEO	Steve Chappell	Suisun Resource Conservation Dist	(707) 425-9302	(707) 425-4402
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
TBEL	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
B	Jerry Karr	Vallero Refining Benicia / Audubon	(707) 745-7568	
B	Jan Knight	US Fish and Wildlife Service	(916) 978-4866	
B	Mary Shaw	California Native Plant Society - Solano Pres	(707) 747-5481	

2-660 - A Grizzly Bay - Site Strategy 2-660 -A

Count Solano **NOAA CHART:** 18656 Suisun Bay Latitude 3 8 08 N Longitude 1229 02 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site includes all of Grizzly Bay and the shoreline perimeter from the mouth of Montezuma Slough to Pt. Buckner.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
This shallow bay can have dangerously aggressive waves under windy conditions. There are shallows along margins.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
There are two great concerns here. First, vast numbers of ducks stay here; typically about 100,000 during the winter: ducks are very vulnerable to oil. Second, there are large sensitive marshes particularly at the northeast but also along all the margins and little side channels. The shallow water and large waves commonly encountered will make this area difficult to protect with current technology. Minimize trampling of the marsh because there are very small endangered plants and animals present.

SITE STRATEGIES

Strategy 2-660.1

(USCG Strategic Objective: **567**) **Dates:** SISRS 01/01/1994 Approved last tested ACP date 01/01/1994

Objective or Prevention Condition

Protective booming of northeast prograding marsh

Technique Details

Exclusion Booming: If it appears that other strategies will not keep oil out of the wetlands recommend exclusion booming be deployed across the northeastern shore of Grizzly Bay from Pelican Pt. to the northern shore of the bay. It is estimated that 13,000 ft. of harbor or tidal barrier boom will be required to exclude oil from the wetlands at the head of Grizzly Bay. This strategy for deployment of exclusion boom can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, CA (Hayes and Montelo, 1994).

Strategy 2-660.2

(USCG Strategic Objective:) **Dates:** SISRS 02/02/1994 Approved 07/01/1994 last tested ACP date 07/01/2002

Objective or Prevention Condition

07/01/1994

Deflection at Pt. Buckler. Keep oil in the Suisun Cut channel and impede it from moving across Grizzly Bay.

Technique Details

Deploy 300' 8X8+ harbor boom off Pt Buckler at about the 15' depth contour. Shallows near shore are a grounding threat to boom boat.

Table of Response Resources

strategy	hboo	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy personnel	tending personnel	SO
2-660.2	300	0	0	22#+/danforth & chain	0	1	0	0	shallow draft boom boat -	3		
2-660.1	13000			26/22+/danforth + chain		12	2			40	40	567

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Land access is from the private levee roads along the bay. They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road (contact Grizzly Island Wildlife Refuge for assistance with access). Nearest boat access is 3 miles southeast at McAvoys Marina, Bay Point (8 mi to Martinez, 8 mi to Pittsburg). Extreme shallows near shore limit traffic to very shallow draft vessels and

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
seasonal limitations on levees

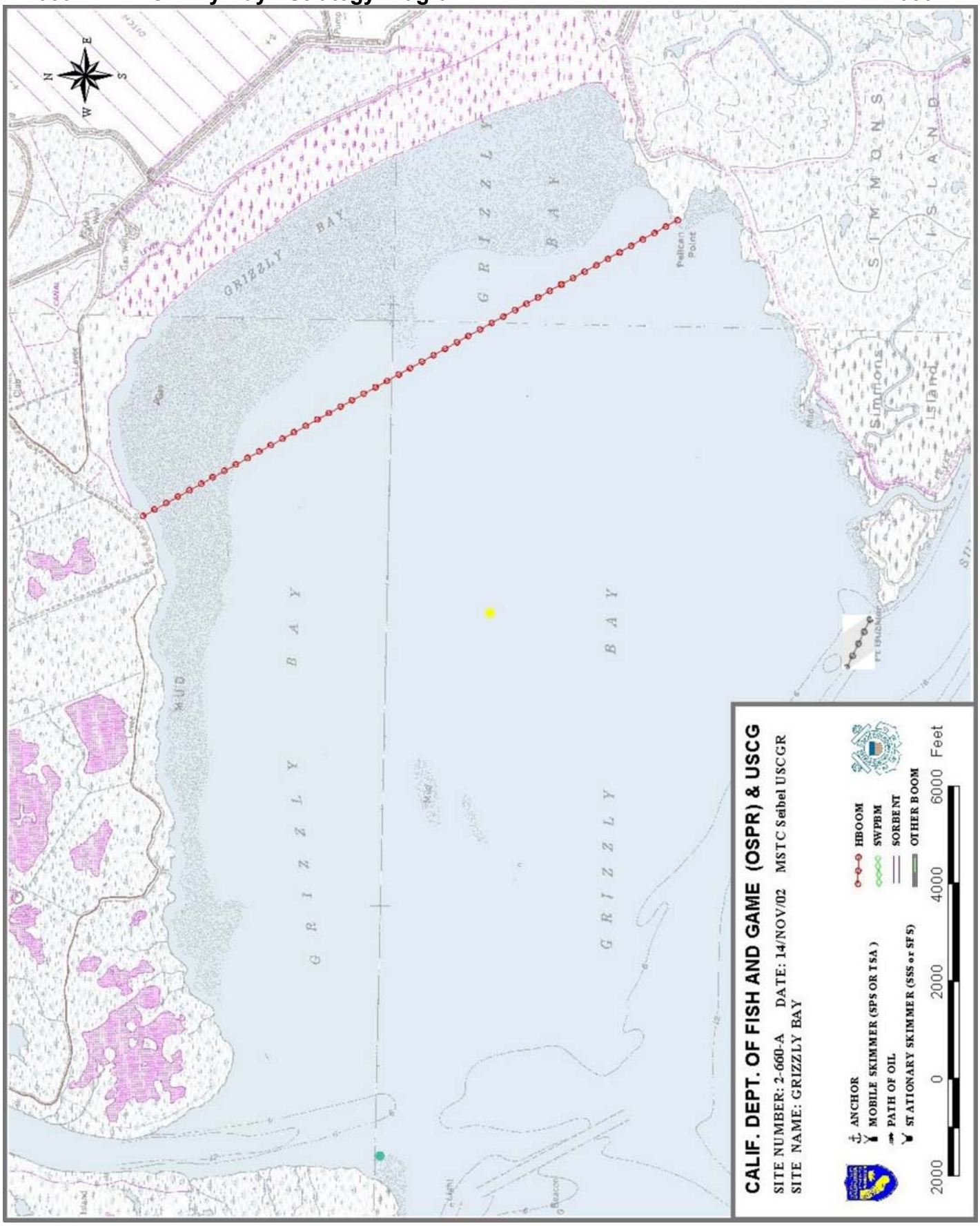
WATER LOGISTICS:

Access limitations: depth, obstructions:	very shallow at shorelines: margins are mudflats at low low
Boat Launching, Loading, Docking and Services Available:	nearest launch is Martinez, Benicia, and McAvoy's; each has fuel, moorage, and repair.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Best facilities, staging, field posts are at above marinas.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-660-A DATE: 14/NOV/02 MSTC Seibel USCGR
SITE NAME: GRIZZLY BAY
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
2000 0 2000 4000 6000 Feet
GRIZZLY BAY
MUD
SIMMONS ISLAND
Pelican Point
Simmons Island

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2-665 -A Simmons Island - Site Summary 2-665 -A

County: Solano **GRP:** 6 **Latitude** 38 05.4 **N** **Longitude** 122 00 **W**
USGS: Honker Bay, Vine Hill **OSPR Map:** 148 147 **Last ACP Update** 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site includes the 4 miles of bay frontage on Suisun Cutoff and berm islands of Simmons Island from Noyce Slough on the east to Pt. Buckler. There are several land ownerships - all are duck clubs. This location is also strategic as a pathway for oil to move from west Suisun Bay to the extensive marshes of Honker Bay and nearby locales via Suisun Cutoff. Suisun Cutoff is very deep.) USGS drifter studies have demonstrated how surface currents of western Suisun Bay funnel though this deep channel on flood tides. Simmons Island itself is a large diked island which is maintained for duck hunting. The dike is rip rapped. Some of the margin has a barrow channel separating the historic marsh front from the current island levee, resulting in extensive marshy margins. Although there is some emergent marsh along the ripped island levee, the outer perimeter is a premium strip of native marsh. The barrow channel is open to the bay at multiple points. Wave action here tends to be tangential to the shoreline. There is a tide gate to the inner island sloughs at Noyce Slough.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
These marshy areas have A-protection priority at all times. Major seasonal concerns are the large numbers of waterfowl which here and in adjacent areas.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
These marshy areas are pristine to excellent habitat for all manner of marsh species. Oil must be prevented from entering barrow channels and interior sloughs by exclusion booming. The open bay waters both here and to the east in Honker Bay are important for wintering waterfowl. Inner island marshes are exposed to oil threats if the tide gate at Noyce Slough is open.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
The marshy margins are prime marsh bird and waterfowl habitat for many species including Suisun song sparrow and possibly black rail. This area is heavily used by ducks and other water birds during the wintering season.

These emergent marshes are inhabited by semi-aquatic mammals such as river otter, raccoon, beaver and muskrat. Salt marsh harvest mouse is probably present.
Fish using these waters include adults and juveniles of the various Delta species, including sensitive species: Delta smelt, longfin smelt, and winter-run chinook; major fish stocks move though this area: salmon, steel head, green and white sturgeon, striped bass, American shad.
The emergent marshes here are typical tule-sedge mix with some cattail.
Several sensitive plants occur here: Mason's lilaeopsis, Suisun marsh aster, and soft bird's beak.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Peter Baye	U S Army Corps of Engineers	(415) 744-3322	
B	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 955-7800	
EL	Steve Chappell	Suisun Resource Conservation Dist	(707) 425-9302	(707) 425-4402
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
TBEL	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
B	Kent Nelson	CA Dept of Water Resources	(916) 227-7581	
B	Mary Shaw	California Native Plant Society - Solano Pres	(707) 747-5481	

2-665 - A Simmons Island - Site Strategy 2-665 -A

Count Solano **NOAA CHART:** SUISUN BAY 18658/18652/18656 Latitude 38 05.4 N Longitude 122 00 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site includes the 4 miles of bay frontage on Suisun Cutoff and berm islands of Simmons Island from Noyce Slough on the east to Pt. Buckler. There are several land ownerships - all are duck clubs.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
There are shallows and obstructions along shore and inside the barrow channels.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
This channel, Suisun Cut, is the major avenue for oil to move to Honker Bay, Spoonbill Creek and island marshes. This is a key location because strategy-.1 is key to excluding oil from vast shorelines at this and other sites. There are marshes along the margins which are also vulnerable but of lesser strategic importance. Responders should always minimize trampling of marsh vegetation and tracking oil into

SITE STRATEGIES

Strategy 2-665.1

(USCG Strategic Objective: **5,6**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition
Collection/Exclusion of heavy oil flow though Suisun Cutoff, divert the oil to shore collection areas.

Technique Details
Cascade boom across Suisun Cutoff to direct oil toward quite waters near shore for collection. Set up shore collection/skimming system either at duck club or at dock west of duck club or both. Set additional boom at shore to protect shore and trap oil once it is diverted. Currents are strong and channel is deep: heavy chain and long scope will be necessary. Anchoring skill is a must for this

Strategy 2-665.2

(USCG Strategic Objective: **5**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition
Exclude oil from entering barrow channels and slough entrances.

Technique Details
There are multiple breaks in the north shore. On Suisun Cutoff side, exclude oil from entering side channels by deploying boom across openings (a) Andy Mason Slough - 600' 8X8+Hboom, (b) 400'+ 4X4+hboom/3seg., (c) 300' 4X4+ Hboom/4seg. On the Grizzly Bay side (d), close the through channel (Andy Mason Slough) (800' 4X4+Hboom) and the barrow channel (50' 4X4+ Hboom). (Back with sorbent as necessary). If current is carrying oil out of Suisun Cutoff at Pt Buckler, deploy Hboom (500' 8X8+) off Pt to deflect oil back into Suisun Cutoff. Leave trailing ends to shore to insure against short-circuiting.

Strategy 2-665.3

(USCG Strategic Objective: **5,8**) **Dates:** SISRS 07/06/1997 Approved 09/22/1997 last tested ACP date 09/04/1997

Objective or Prevention Condition 09/22/1997
Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.

Technique Details Check here means **" No strategy diagram": (X)**
If foregoing strategies are inadequate to keep oil off marshy shorelines, deploy exclusion booming around threatened marshfronts: this strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montello, 1994). This would require 6 miles of a combination of intertidal, 8X8+ Hboom, and 4X4+Hboom.

Table of Response Resources

strategy	hboo	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers	-No	special equip	deploy	personnel tending	personnel	SO
2-665.1	4000			22#+ danforth & CHAIN		4	2	2 SSS	3500' of line	16	16 PERSON	frequent checks	5,6
2-665.2	1100	1550		16/22+/danforth + chanin		2	4		very sallow craft, airboat,	15	15 PERSONS	regular inspection	5
2-665.3	10000	15000		anchors and stakes		10	6		2 hovercraft/airboat; 4 very shallow	44	44 PERSONS	2 boomtenders	5,8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Land access is from the private levee roads along the bay. They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road to Grizzly Island Wildlife Refuge. For further access and entry, contact Grizzly Island Wildlife Refuge (707-425-3828) or Suisun Resource Conservation District staff (707-525-9602). Nearest boat access is 3 miles southeast at McAvoys Marina, Bay Point (9 mi to Martinez, 7 mil to Pittsburg).

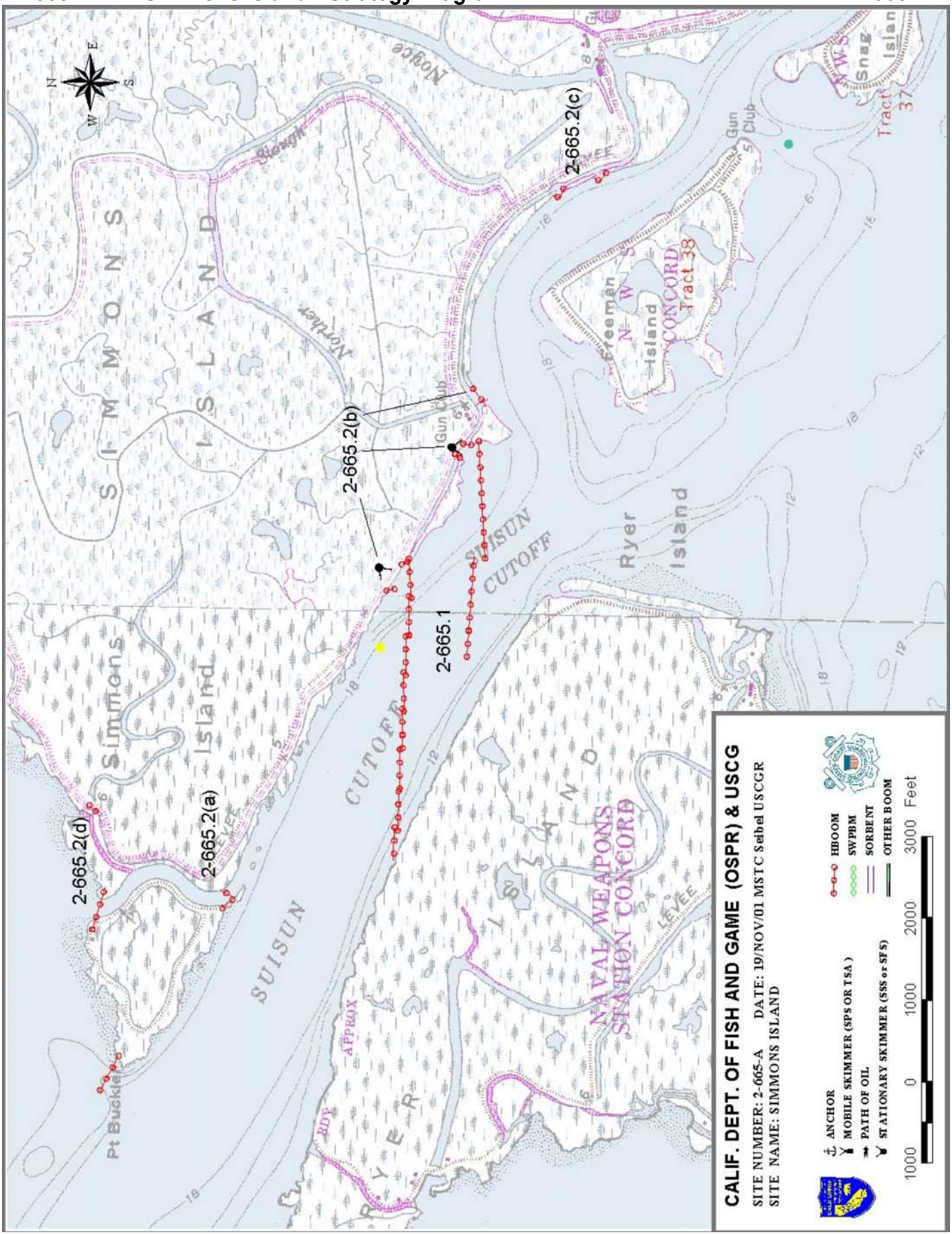
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS:
Access limitations: depth, obstructions: VERY SHALLOW DRAFT < 2' NEAR SHORE.
Boat Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
The duck clubs have power and good small boat docking facilities.
Nearest major deployment site/field post is McAvoy's/Harris', full service marinas, or Concord Naval Weapons Station.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


2-665.2(c)
2-665.2(b)
2-665.1
2-665.2(a)
2-665.2(d)
SIMMONS ISLAND
Simmons Island
Pt Buckler
SUISUN CUTOFF
Ryer Island
CONCORD Tract 38
Freeman Island
Gun Club
NAVAL WEAPONS STATION CONCORD
LEVEE
APPROX
CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-665-A DATE: 19/NOV/01 MSTC Seibel USCGR
SITE NAME: SIMMONS ISLAND
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
1000 0 1000 2000 3000 Feet

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2-667 -A Freeman & Snag Islands - Site Summary 2-667 -A

County: Solano **GRP:** 6 **Latitude** 38 08.8 **N** **Longitude** 121 59.5 **W**
USGS: Honker Bay **OSPR Map:** 148 **Last ACP Update** 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site includes Snag and Freeman Islands which are located just south of Dutton Island and east of Ryer Island in north central Suisun Bay. Both are property of Concord Naval Weapons Station. These two islands have emergent marsh margins. Snag is high marsh with cattails and shrubs. Freeman Island is low saltmarsh. It has an inside channel which goes all the way around the inside of the island and supplies water to the inner marsh with small channels. Tide water is admitted to this inner channel via breaks in its margin: there four breaks in the southwest shore and two on the north shore of Freeman Island. It also has a convoluted marshy shoreline.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
The marshy areas have A-protection priority at all times. Winter is a particularly important time for waterfowl.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
Both Islands are marshes which have great sensitivity. Freeman Island is much more vulnerable than Snag because Freeman is more vulnerable to oil intrusions to the inner marshes via multiple tidal channels and its low marshy fringe. Snag Island has no tidal channels but has a marshy fringe and supports high marsh species.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
There is extensive marsh bird habitat: Sensitive Species include Suisun Song Sparrow and probably black rail.

These islands are inhabited by small semi-aquatic mammals such as river otter, beaver, mink and muskrat.
Fish species using these waters include adults and juveniles of the various Delta species, including sensitive species: Delta smelt, longfin smelt, Winter-run chinook, and major fish stocks move though this area: salmon, steel head, sturgeon, striped bass, American shad.
The emergent marshes here are predominately tule, but cattails and sedges are also important.
Several sensitive plants occur here: Delta tule pea, Mason's lilaeopsis.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 955-7800	
	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Trinidad Huerta	Concord Naval W.S.- Emergency Res	(925) 246-5003	(925) 246-5174
	Kent Nelson	CA Dept of Water Resources	(916) 227-7581	
	Paul Rankin	Concord Navel W.S. - Environmental	(925) 246-5674	(510) 246-5174

Count Solano **NOAA CHART:** 18656 Suisun Bay/Roe Island & vicinity Latitude 38 08.8 N Longitude 121 59.5 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
There are shallows and obstructions around and inside the island. Suisun bay can have aggressive waves.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
These island marshes and the endangered plants and animals living there, are very vulnerable to oil damage. Primary concern is penetration of oil into the marsh via tidal channels and secondarily into emergent marsh margins. Responders should minimize trampling of marsh vegetation and avoid tracking oil into marshes and sediments. Small endangered plants and animals are present.

SITE STRATEGIES

Strategy 2-667.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition

Exclude oil from entering openings to perimeter barrow channel and interior channels of Freeman Island.

Technique Details

There four breaks in the southwest shore and two on the north shore of Freeman Island, all of them open to an inside barrow channel which goes all the way around the inside of the island and supplies water to the inner marsh. On the south side, exclude oil entry by deploying chevron "V" exclusions with about 300' each of 8X8+ boom with mid-point anchors and staking at shoreline in front of the openings. To be sure to stop movement of any oil passing through these wave-exposed openings, deploy short segments of 4X4+ across barrow channel to the left and right of the large openings. On the northerly shore, exclude oil from the two openings with short segments of 4X4+ in small chevrons.

Strategy 2-667.2

(USCG Strategic Objective: **7**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition

Depending on winds, divert oil past windward pockets to minimize shore oiling for Freeman and to lessor extent for Snag Island.

Technique Details

On westerly end of Freeman Island, deploy deflection boom at the best angle to protect windward shore from approaching oil using 1300' of 8X8+. Repeat on Snag Isl if wind is moving oil from south or southwest.

Strategy 2-667.3

(USCG Strategic Objective: **8**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition

Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.

Technique Details Check here means **" No strategy diagram": (X)**

If forgoing strategies are inadequate to keep oil off marshes, deploy exclusion booming around threatened marshfronts: this strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994).

Table of Response Resources

strategy	hboo	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel		SO
2-667.1	1200	250		8/12+/danforths & stakes	1	2			7	7 PERSON	regular inspection	5
2-667.2	1300			6/22+/danforths & stakes	2				6		frequent checks	7
2-667.3	4000	13000		18/22+/danforth & stakes	5	3			21	21 PERSON	frequent checks	8

LOGISTICS

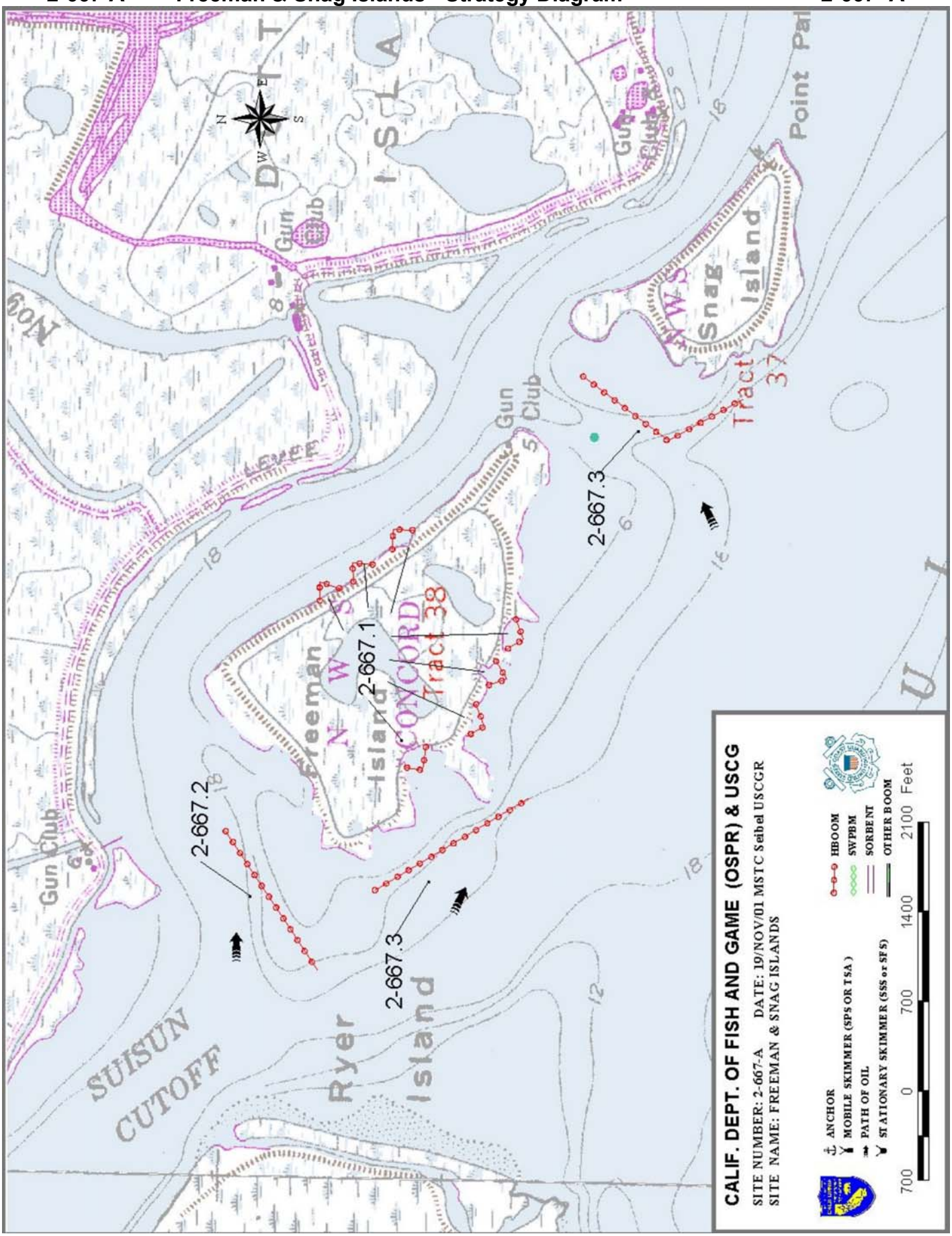
DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
There is no land access. Nearest land access is across channel to Dutton Island. Nearest boat access is 3 miles southeast at McAvoys Marina, Bay Point (8 miles to Martinez, 7 miles to Pittsburg).

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
NONE

WATER LOGISTICS:
Access limitations: depth, obstructions: VERY SHALLOW DRAFT < 2' NEAR ISLAND
Boat Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
The only alternative to marina facilities are duck clubs at nearby Dutton and Simmons Isls including good docking facilities.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-667-A DATE: 19/NOV/01 MSTC Seibel USCGR
SITE NAME: FREEMAN & SNAG ISLANDS
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (S or SF$)
HBOOM
SWPBM
SORBENT
OTHER BOOM
700 0 700 1400 2100 Feet
2-667.1
2-667.2
2-667.3
2-667.3
Freeman Island
Snag Island
Ryer Island
SUISUN CUTOFF
CONCORD Tract 38
Tract 37
Gun Club
Point Pa

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2-668 -A Dutton Island - Site Summary 2-668 -A

County: Solano **GRP:** 6 **Latitude** 38 08.8 **N** **Longitude** 121 59.5 **W**
USGS: Honker Bay / Vine Hill **OSPR Map:** 148 147 **Last ACP Update** 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site includes the marshy islands off the mouth of Noyce Slough at the west edge of Dutton Island and east to include the mouth of Champion Slough. The property owners are the Grey Island Duck Club and the Wheeler Island Duck Club. The inner levee is rip rapped with intermittent emergent marsh. The levee is fronted with either a barrow channel or historic slough channels leaving an intermittent border of emergent marsh berm islands. These inlands and sloughs have extensive emergent undiked marsh and convoluted perimeters with habitat varying from pristine to high quality (> 5 miles). Several duck club docks are present.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
These marshy margins have A-protection sensitivity always.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
These marshy islands and margins have the highest protection priority at all times, and oil must be excluded at entries to small sloughs and barrow channels. These marshy areas are prime habitat for most marsh dwelling species.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
This is prime marsh bird and waterfowl habitat. Bird Sensitive Species include Suisun song sparrow and possibly black rail.

These emergent marshes are inhabited by semi-aquatic mammals such as river otter, raccoon, beaver and muskrat.
These waters are used by adults and juveniles of the various Delta species, including sensitive species: Delta smelt, longfin smelt, and winter-run chinook; major fish stocks move though this area: salmon, steel head, sturgeon, striped bass, American shad.
The emergent marshes here are typical tule-sedge mix with some cattail.
Several sensitive plants occur here: Mason's lilaeopsis, Suisun marsh aster.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 955-7800	
ELO	Steve Chappell	Suisun Resource Conservation Dist	(707) 425-9302	(707) 425-4402
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
TEL	Grey Island Duck Club	Grey Island Duck Club - 805, 806		
BTELO	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
B	Kent Nelson	CA Dept of Water Resources	(916) 227-7581	
TEL	Wheeler Island Duck Club	Wheeler Island Duck Club - 807		

2-668 -A Dutton Island - Site Strategy 2-668 -A

Count Solano **NOAA CHART:** 18656 Suisun Bay/Roe Island & vicinty

Latitude		Longitude	
38 08.8	N	121 59.5	W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site includes the marshy islands off the mouth of Noyce Slough at the west edge of Dutton Island and east to include the mouth of Champion Slough. The property owners are the Grey Island Duck Club and the Wheeler Island Duck Club.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
This locale is important both because it is a point where oil threatening to move into Honker Bay can be intercepted and directed to shore collection, and also because there are extensive marshy islands and channels. Prime concern is intercepting oil threat to Honker Bay. Secondary issue is closing off side channels and marshes. Responders should minimize trampling of marsh and tracking oil into marshes and sediments. Small endangered species are underfoot.

SITE STRATEGIES

Strategy 2-668.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition
Exclude oil from entering barrow channels and slough entrances.
Technique Details
There are two openings at the east end (a: Noyce Slough): 600'4X4+Hboom and 3X(50' 4x4+) for the levee channel (beware of rocks). Verify that the westerly barrow channel has been blocked with 50' 4X4+ (opposite Freeman Isl per Simmons Island SS). Champion Slough exclusion requires 1000' 4X4+ at levee channel (b) just east of duck club pier and 600' and 100' 4X4 at opening (c) at east

Strategy 2-668.2

(USCG Strategic Objective: **5,6**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition
Exclude by Diversion to Collect at shore line: If heavy oil is threatening Honker Bay and shorelines
Technique Details
Deploy exclusion/deflection boom at the best angle to divert oil out of Suisun Cutoff to Dutton Island shoreline for shoreside skimming system (SSS) recovery. Depending on prevailing winds, plan shoreside recovery location either at levee east of mouth of Noyce Slough (opposite Freeman Isl) or at the duck club (opposite Snag). Deploy 1500' 8X8+ Hboom in a favorable array and angle to direct oil out of swift current to quiet shore waters. Cascade as necessary. Repeat if oil is likely to escape (a second length of 1500 ft of boom would be needed). Channel is deep and currents are strong: very good anchoring skills are key to the success of this

Strategy 2-668.3

(USCG Strategic Objective: **5,6**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition
Portective booming of shoreline: When prevailing wind and oil threatens to overwhelm these measures, exclusion boom to protect shoreline especially easterly.

Technique Details **Check here means " No strategy diagram": (X)**
If forgoing strategies are inadequate to keep oil off marshes, deploy exclusion booming around threatened marshfronts: this strategy can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994).

Table of Response Resources

strategy	hboo	swpbm	xboom	Anchoring	sorb	Bb/skif		skimmers	-No	special equip	deploy	personnel tending	personnel	SO
2-668.3	0	6000		6/22+/danforths & stakes		6	3			hovercraft/airboat; very shallow	18	18 PERSON	2 person tending	5,6
2-668.1	0	2500									12	12 PERSON	regular inspection	5
2-668.2	1500			22#+ danforths & heavy chain		3	2	1	SSS	extra line for scope	11	11 PERSON	3 man skimming	5,6

LOGISTICS

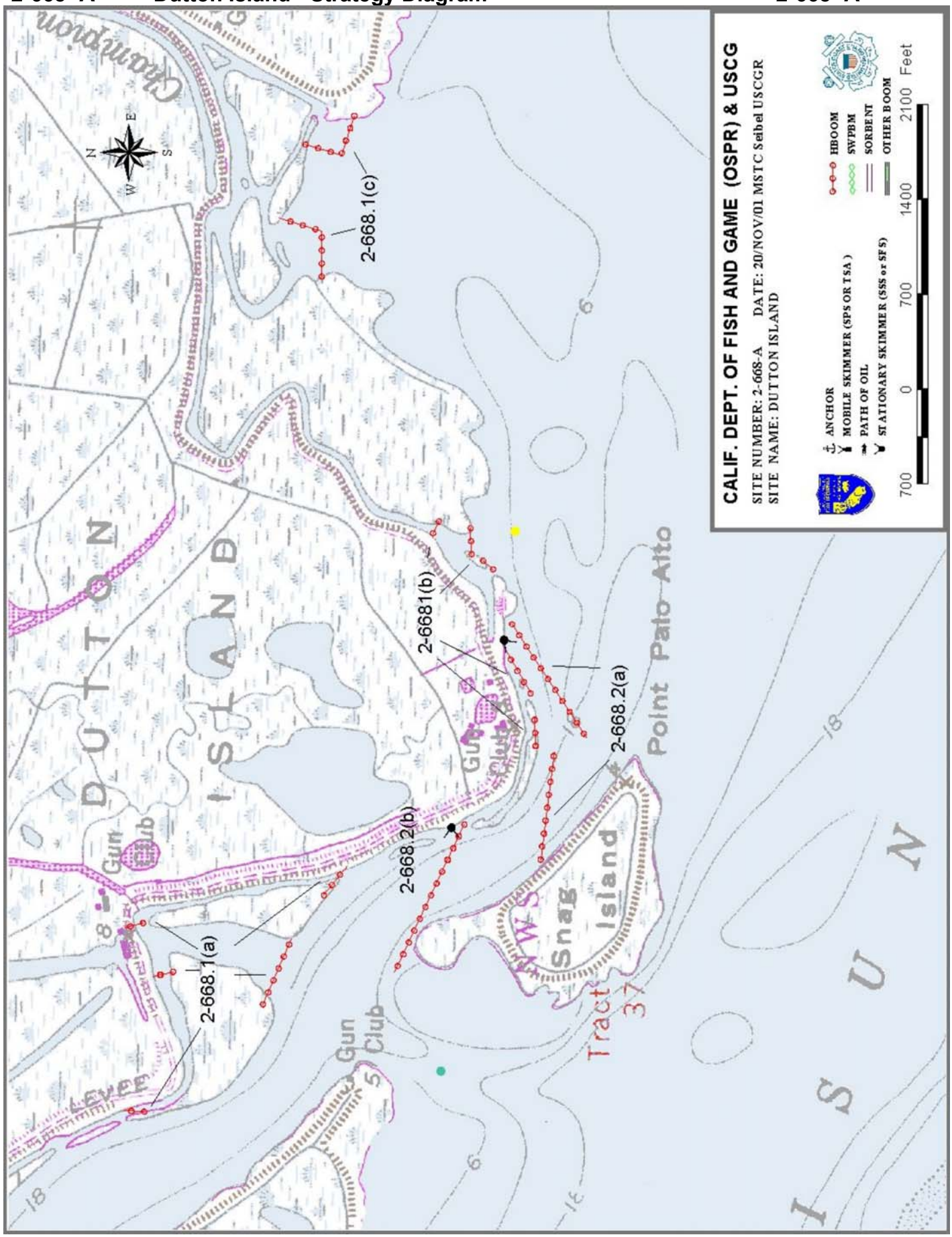
DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Land access is from the private levee roads along the bay. They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road to Grizzly Island Wildlife Refuge. For further access and entry, contact Grizzly Island Wildlife Refuge (707-425-3828) or Suisun Resource Conservation District staff (707-525-9602). Nearest boat access is 3 miles southeast at McAvoys Marina, Bay Point (9 mi to Martinez, 7 mil to Pittsburg).

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS:
Access limitations: depth, obstructions: VERY SHALLOW NEAR ISLAND, OBSTRUCTIONS
Boat Launching, Loading, Docking and Services Available: Launch at McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
The duck clubs have power and good small boat docking facilities. By their permission, staging may be possible there. Otherwise stage at Grizzly Island Wildlife Refuge for land based resources. Stage at McAvoy-Harris's Yacht Club, Bay Point, or Pittsburg/ Martinez

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-668-A DATE: 20/NOV/01 MSTC Seibel USCGR
SITE NAME: DUTTON ISLAND
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
700 0 700 1400 2100 Feet
2-668.1(c)
2-6681(b)
2-668.2(a)
2-668.2(b)
2-668.1(a)
DUTTON ISLAND
Point Pato
Snag
Island
Tract 37
Gun Club
Channel

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2-670 - A Honker Bay - Site Summary 2-670 - A

Honker Bay West - Wheeler Island Shore 2-671 - A

Honker Bay North - Van Sickle Island Shore 2-672 - A

Honker Bay East - Chipps Island Shore 2-673 - A

County: Solano **GRP:** 6 **Latitude** 38 04 **N** **Longitude** 121 56.3 **W**
USGS: Honker Bay **OSPR Map:** 148 **Last ACP Update** 09/04/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site includes all the open waters of Honker Bay and its marsh perimeter. The bay is shallow (averaging less than six feet deep but is without obstruction except near shorelines where it can be very shallow. On most margins, there are barrow channels separating the historic marsh front from the current island levee. This results in a band of marshy islands with occasional passages though to the barrow channels and other historic marsh channels behind. Although there is some emergent marsh along the rip rapped island levee, the outer perimeter is a premium strip of native marsh. As a result, there are several hundred acres of undiked marsh and many miles of marshy margins. The outer margin is flooded occasionally during the peak runoff and extreme high tides of the year. The outer bay margin is exposed to tangential wave action resulting is a mildly eroding shore with some accreting margins particularly in the northeast corner of the bay (North Honker Bay site 2-672). The land around Honker Bay is mostly held by private duck clubs. The response strategy here has been broken up into three separate divisions, because of the shoreline complexity and length, the logistics of response, and the likelihood that oil would impact at different timeframes on the different shores.

Honker Bay West - Wheeler Island Shore 2-671 - A
This site includes the 2 miles of bay frontage and berm islands of Wheeler Island from Champion Slough to Rock Creek. The land is owned by nine gun clubs

Honker Bay North - Van Sickle Island Shore 2-672 - A
This site includes the 2 miles of bay frontage and marshy islands of Wheeler Island Rock Creek to Spoonbill Creek. There are actively accreting areas
just west of Spoonbill Creek. The land is owned by three gun clubs.

Honker Bay East - Chipps Island Shore 2-673 - A
This site includes the 2 miles of bay frontage on the western side of Chipps Island including the barrow channel behind the bay frontage.
The outer bay margin is exposed to tangential wave action resulting is a mildly eroding shore with some accreting margins. There are two gun clubs.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
These marshy areas have A-protection priority at all times. Major seasonal concerns are the massive numbers of waterfowl which raft on the bay waters in the winter, and sensitive species of fish and salmonids which seasonally use or pass thought this area.

RESOURCES AT RISK

HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
These marshy margins and berm islands have highest protection priority at all times. Oil must be prevented from entering barrow channels and interior sloughs by exclusion booming. These marshy areas are pristine to excellent habitat for all manner of marsh species.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
The open water of honker bay is used by massive numbers of diving ducks, puddle ducks, and other water birds during the wintering season.
The marshy margins are prime marsh bird and waterfowl habitat including Suisun song sparrow and possibly black rail. These emergent marshes are inhabited by semi-aquatic mammals such as river otter, raccoon, beaver, and muskrat.
Fish using these waters include adults and juveniles of the various Delta species, including sensitive species: Delta smelt, longfin smelt, and winter-run chinook; major fish stocks move though this area: salmon, steel head, sturgeon, striped bass, American shad.
The emergent marshes here are typical tule-sedge mix with some cattail.
Several sensitive plants occur here: Mason's lilaeopsis, Suisun marsh aster.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Peter Baye	U S Army Corps of Engineers	(415) 744-3322	
B	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 955-7800	
ELOB	Steve Chappell	Suisun Resource Conservation Dist	(707) 425-9302	(707) 425-4402
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
TBELO	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
B	Kent Nelson	CA Dept of Water Resources	(916) 227-7581	
B	Mary Shaw	California Native Plant Society - Solano Pres	(707) 747-5481	

2-671 -A Honker Bay West - Wheeler Island Shore - Site Strategy 2-671 -A

Count Solano **NOAA CHART:** SUISUN BAY 18658/18556/18656 Latitude 38 04 N Longitude 121 56.3 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site includes the 2 miles of bay frontage and berm islands of Wheeler Island from Champion Slough to Rock Creek. The land is owned by nine gun clubs.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
There are shallows and obstructions along shore and inside the barrow channels. Honker Bay waves can be a navigation hazard when there are strong west winds.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
The marshes at the shoreline are home to many kinds of birds and animals, including some endanger plants, birds, and animals. The major concerns are two. First, there are opening and channels through which the oil can pass and harm even greater areas behind the bay front. Second, oil can get on the front edge of the marsh. Harm from response actions is always a concern. Try not to tromp oil into the soft ground. Keep in mind there are small endangered plants and animals underfoot.

SITE STRATEGIES

Strategy 2-671.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition
Exclude oil from entering barrow channels and slough entrances.

Technique Details
There are multiple breaks in the north shore which will allow oil to move into marshes behind. It will take at least 8 separate deployments of 8x8+ or 4X4+ Hboom (depending on severity of wave action) to close barrow channels and slough openings. Deploy in a chevron "V" formation with center anchors at each opening. Leaving enough trailing ends to insure a seal at the shore connection in order to prevent short-circuiting at low tides.

Strategy 2-671.2

(USCG Strategic Objective: **7**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition
exclusion/deflection boom at the best angle fend oil past marshfront when heavy oil is approaching the shore - divert the oil to on-water skimming.

Technique Details
To deflect oil away from the shoreline, deploy 1700' of 8X8+ harbor boom from a point near Champion Slough mouth, at a diagonal to the current. Cascade as necessary. Advise IC and Ops for possible coordination of deflection with on-water skimming operations.

Strategy 2-671.3

(USCG Strategic Objective: **8**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 09/04/1997

Objective or Prevention Condition
Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.

Technique Details Check here means **" No strategy diagram": (X)**
Protect windward shore from approaching oil. If there is a wind chop, this may best be accomplished using two layers of 4X4 swamp boom, else a single layer of 8X8+ Hboom: this strategy for deployment can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994). Requires 11,000' of Hboom or tidal barrier boom.

Table of Response Resources

strategy	hboo	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy	personnel tending	personnel	SO
2-671.1	1300	700		6/12+/danforhts & stakes		2	4		15	15 PERSONS	regular inspection	5
2-671.2	1700			3/22+/danforths		3	2		11	11 PERSON	frequent checks	7
2-671.3	11000			12/22+/danforths & stakes		4	4	hovercraft. air boat; 4 very shallow	20	25 PERSONS	2 boomtenders	8

LOGISTICS

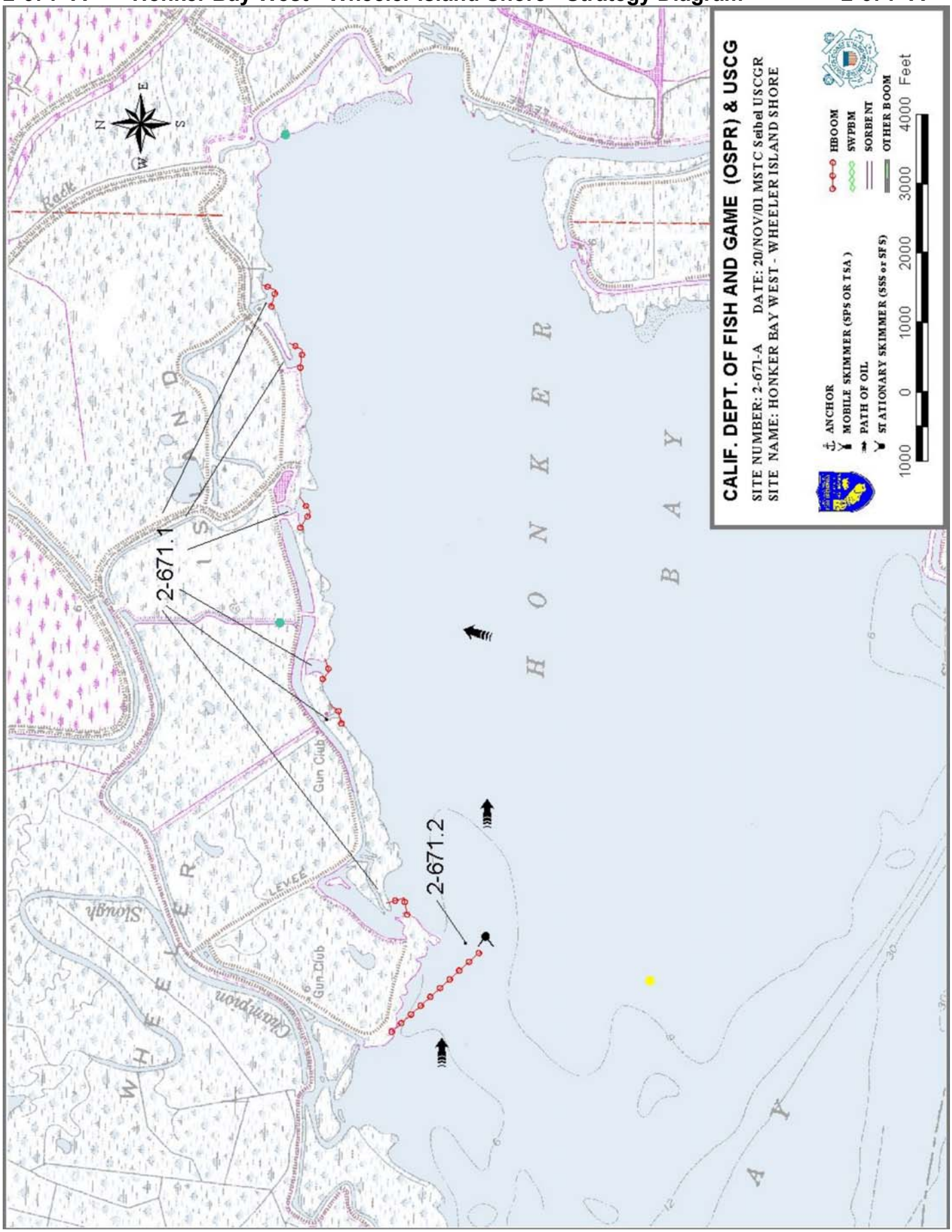
DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road to Grizzly Island Wildlife Refuge. For further access and entry, contact Grizzly Island Wildlife Refuge (707-425-3828) or Suisun Resource Conservation District staff (707-525-9602). Nearest boat access is 3 miles southeast at McAvoys Marina, Bay Point (9 mi to Martinez, 7 mil to Pittsburg).

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS:
Access limitations: depth, obstructions: VERY SHALLOW DRAFT < 2' NEAR SHORE.
Boat Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
The duck clubs have power and good small boat docking facilities.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-671-A DATE: 20/NOV/01 MSTC Seibel USCGR
SITE NAME: HONKER BAY WEST - WHEELER ISLAND SHORE
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
1000 0 1000 2000 3000 4000 Feet
2-671.1
2-671.2
HONKER BAY
WHEELER ISLAND
Gun Club
Gun Club
LEVEE
Slough
Champion
Rock
N
E
S
W

2-672 -A Honker Bay North - Van Sickle Island Shore - Site Strategy2-672 -A

Count Solano **NOAA CHART:** SUISUN BAY 18658/18556/18656 **Latitude** 3 8 04 **N** **Longitude** 121 56.3 **W**

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site includes the 2 miles of bay frontage and marshy islands of Wheeler Island Rock Creek to Spoonbill Creek.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
There are shallows and obstructions along shore and inside the barrow channels.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
The marshes at the shoreline are home to many kinds of birds and animals, including some endanger plants, birds, and animals. The major concerns are two. First, there are opening and channels through which the oil can pass and harm even greater areas behind the bay front. Second, oil can get on the front edge of the marsh. Harm from response actions is always a concern. Try not to tromp oil into the soft ground. Keep in mind there are small endangered plants and animals underfoot.

SITE STRATEGIES

Strategy 2-672.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 07/06/1997 Approved 09/04/1997 last tested ACP date 09/04/1997

Objective or Prevention Condition
Exclude/collect oil: exclude from entering Spoonbill Creek and barrow channels and divert to collection on Van Sickle Isl shore.

Technique Details **Check**
(site a) Deploy 800' 8X8+ Hboom from Chipps Island across the mouth o fSpoonbill Creek at best angle to collect oil at the Van Sickle Shore. Establish Shore Side Skimming (SSS). Repeat deployment if currents or waves are likely to overtop or underflow collection boom.
(sites b, c, & d) Close the openings to barrow channels using two layers of swamp boom, backed by sorbent boom. Anchor close to

Strategy 2-672.2

(USCG Strategic Objective: **6**) **Dates:** SISRS 07/06/1997 Approved 09/04/1997 last tested ACP date 09/04/1997

Objective or Prevention Condition
Deflect to collection site: use prevailing winds

Technique Details **Check**
Establish a second shore side skimming point on Van Sickle Island. Deploy deflection booms at best angle to direct oil past marshfronts to collection. Use about 1500' of 8X8+ harbor boom to direct oil to shore and about 500' to deflect oil into the pocket from the north. Line the shore with sorbents. This site has extreme shallows and obstructions - particularly at lower tides. Deployment will need to be made during higher tide phase. Boom boats capable of withstanding grounding must be used here.

Strategy 2-672.3

(USCG Strategic Objective: **8**) **Dates:** SISRS 07/06/1997 Approved 09/04/1997 last tested ACP date 09/04/1997

Objective or Prevention Condition
Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.

Technique Details **Check here means " No strategy diagram": (X)**
Deploy exclusion/deflection boom at the best angle fend oil past marshfront to designated collection area. Protect windward shore from approaching oil. If there is a wind chop, this may best be accomplished using two layers of 4X4 Hboom, else a single layer of 8X8+: this strategy for deployment can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994). Requires 12,000' of Hboom or tidal barrier boom.

Table of Response Resources

strategy	hboo	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers		-No	special equip	deploy	personnel tending	personnel	SO
2-672.1	800	300		8/12+/danforths	300	2	2	1	SSS		10	10 PERSONS	2 / 1 boat:	5
2-672.2	2000			5/22+/danforths w chain	500	2	1	1	SSS	hovercraft. airboat	8	10 PERSON	use above team-	6
2-672.3	12000			12/22+/danforths & stakes		4	6			very shallow Bboat,	25	25 PERSONS	2 boomtenders	8

LOGISTICS

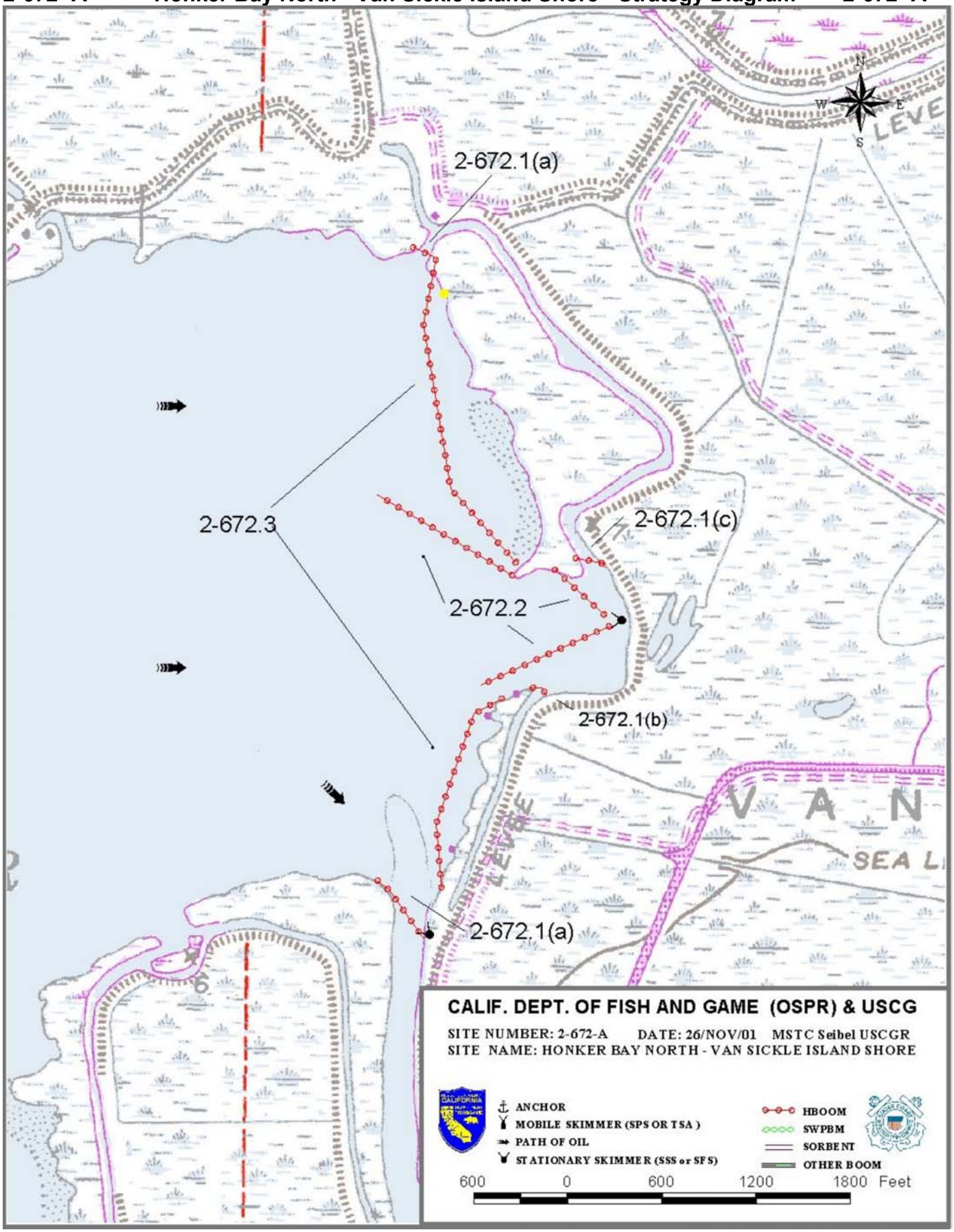
DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
They may be reached from Hwy 12 in Suisun City, then south on Grizzly Island road to Grizzly Island Wildlife Refuge. For further access and entry, contact Grizzly Island Wildlife Refuge (707-425-3828) or Suisun Resource Conservation District staff (707-525-9602). Nearest boat access is 3 miles southeast at McAvoys Marina, Bay Point (9 mi to Martinez, 7 mil to Pittsburg).

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS:
Access limitations: depth, obstructions: VERY SHALLOW DRAFT < 2' NEAR SHORE.
Boat Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina. All boat services and fuel are available.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
The duck clubs have power and good small boat docking facilities. Best staging is probably McAvoys Marina at Bay Point. Martinez and Pittsburg would be secondary alternatives. All have full services.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone


2-672.1(a)
2-672.3
2-672.1(c)
2-672.2
2-672.1(b)
2-672.1(a)
CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-672-A DATE: 26/NOV/01 MSTC Seibel USCGR
SITE NAME: HONKER BAY NORTH - VAN SICKLE ISLAND SHORE
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
600 0 600 1200 1800 Feet

2-673 -A Honker Bay East - Chipps Island Shore - Site Strategy 2-673 -A

Count Solano **NOAA CHART:** SUISUN BAY 18658/18556/18656 **Latitude** 3 8 04 **N** **Longitude** 121 56.3 **W**

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site includes the 2 miles of bay frontage on the western side of Chipps Island including the barrow channel behind the bay frontage.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
There are shallows and obstructions along shore and inside the barrow channels.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
The marshes at the shoreline are home to many kinds of birds and animals, including some endanger plants, birds, and animals. The major concerns are two. First, there are opening and channels through which the oil can pass and harm even greater areas behind the bay front. Second, oil can get on the front edge of the marsh. Harm from response actions is always a concern. Try not to tread oil into the soft ground. Keep in mind there are small endangered plants and animals underfoot.

SITE STRATEGIES

Strategy 2-673.1

(USCG Strategic Objective: **5**) **Dates:**

SISRS	Approved	last tested	ACP date
07/06/1997	09/22/1997		09/04/1997

Objective or Prevention Condition

Exclude oil from entering barrow channels and slough entrances.

Technique Details

Close the two openings to the barrow channel.
(Site a) Use two layers of swamp boom (600' + 550' of 4X4+), backed with sorbent boom (500'), to exclusion boom the south opening. Anchor boom across channel entries and leave a trailing end to make a tidal seal. Observe and repeat if wind chop is overwhelming the boom. There are submerged pilings in this area.
(Site b) The north opening must be boom both at the mouth (350' 4X4+) and inside where the two barrow channels branch off (100'

Strategy 2-673.2

(USCG Strategic Objective: **6**) **Dates:**

SISRS	Approved	last tested	ACP date
07/06/1997	09/22/1997		09/04/1997

Objective or Prevention Condition

At Pt Simmons, deflect the oil past site to keep oil in channel and to avert carry-back into Honker Bay on eddy.

Technique Details

Deploy deflection boom (600') at Simmons Pt on a shallow contour to keep oil in the channel best and stop it from angle fend oil past marshfront to designated collection area. BEWARE: This area west of Simmons Point is an underground pipe corridor - use anchors with extreme caution!

Strategy 2-673.3

(USCG Strategic Objective: **8**) **Dates:**

SISRS	Approved	last tested	ACP date
07/06/1997	09/22/1997		09/04/1997

Objective or Prevention Condition

Protective Booming: If there is threat of heavy oiling and saturation of the marsh front, deploy protective boom coverage, when resource use will not preclude defending other sites against SO 5 and 6 impacts.

Technique Details **Check here means " No strategy diagram": (x)**

Deploy exclusion/deflection boom at the best angle fend oil past marshfront to designated collection area. Protect windward shore from approaching oil. If there is a wind chop, this may best be accomplished using two layers of 4X4 Hboom, else a single layer of 8X8+: this strategy for deployment can be found in Potential Oil-Spill Protection Strategies for San Francisco Bay, California. (Hayes and Montelo, 1994). Requires 13,000' of Hboom or tidal barrier boom.

Table of Response Resources

strategy	hboo	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy	personnel tending	personnel	SO
2-673.1	0	1700		3/12+& 2/5#+danforth & 15 stakes	500	1	1		5	5 PERSONS	regular inspection	5
2-673.2	600			3/22+/danforth w chain		1	1		11	11 PERSON	frequent checks	6
2-673.3	13000					6	6	shallow Bboats, 1 hovercraft/airboat	25	25 PERSONS	2 boomtenders	8

LOGISTICS

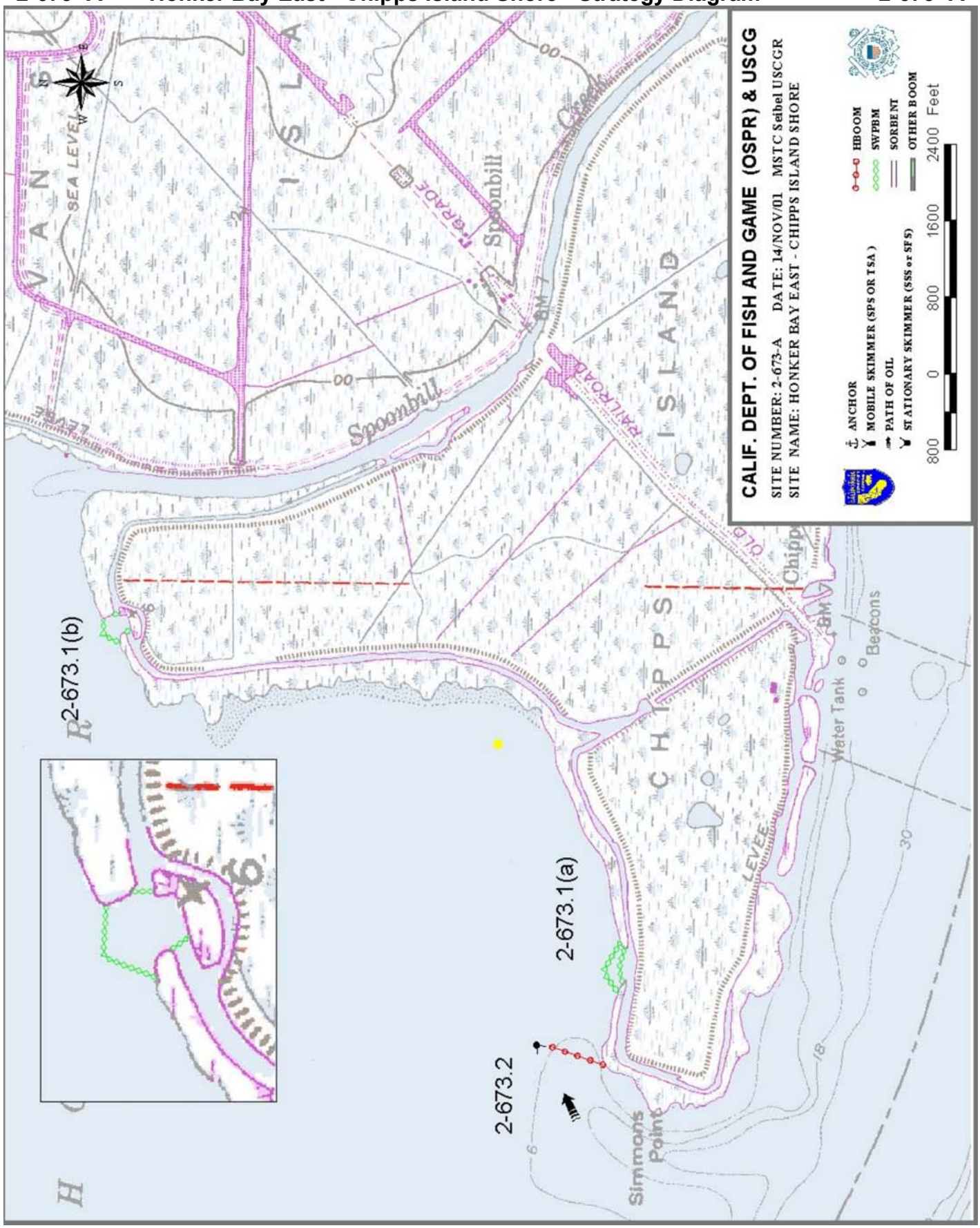
DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
There is only water access to Chipps Island. Nearest boat access is 2 miles southwest at McAvoys Marina, Bay Point (8 mi to Martinez, 5 mi to Pittsburg).

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
ALL TYPES WHEN LEVEES ARE DRY

WATER LOGISTICS:
Access limitations: depth, obstructions: VERY SHALLOW DRAFT < 2' NEAR SHORE.
Boat Launching, Loading, Docking and Services Available: McAvoy/Harris Marina at Bay Point. Pittsburg Marina. Martinez Marina.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Best staging sites are nearby McAvoy/Harris Marina at Bay Point. PG&E, Pittsburg Marina, and Martinez Marina are alternates. The duck clubs on Chipps Island have power and good small boat docking facilities.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-673-A DATE: 14/NOV/01 MSTC Seibel USCGR
SITE NAME: HONKER BAY EAST - CHIPPS ISLAND SHORE
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
800 0 800 1600 2400 Feet
SEA LEVEL
Spoonbill Creek
Spoonbill
RAILROAD
CHIPPS ISLAND
Water Tank
Beacons
LEVEE
Simmons Point
2-673.1(b)
2-673.1(a)
2-673.2

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2-680 -A Suisun Marsh West: Suisun Slough Drainage - Site Summary 2-680 -A

County: Solano **GRP:** 6 **Latitude** 38 10 N **Longitude** 122 05 W
USGS: Benicia/ Vine Hill/ Fairfield/ Cordelia **OSPR Map:** 146 147 142 **Last ACP Update** 10/05/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site extends upstream from the mouth at Grizzly Bay and includes all the marshy areas and sloughs which are tributary including Goodyear Slough, Cordelia Slough, Wells Slough, Pelfier Slough, Sheldrake Slough, Boynton Slough, Peytonia Slough, Hill Slough, Cutoff Slough. This site includes about one third of Suisun Marsh which is about 50% of SF Bay marshland. It is diked and partially diked salt marsh with emergent tule marsh on slough margins. Some locales are in natural historic condition. Many Special Status Species are present. Most of the land is private duck clubs but large tracts are in public ownership including California State wildlife refuges.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
This marsh has A-level protection priority at all times.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
This extensive salt marsh has a A-protection priority. It ranks among the most valuable sites is California. It is saltgrass, pickleweed, and tule/sedge dominated.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
Extensive waterfowl, shorebirds and marsh birds use of this area for feeding and resting. Special Status bird species here include California clapper rail, black rail, Suisun song sparrow, and Suisun common yellowthroat.

Special Status animals: saltmarsh harvest mouse, Suisun ornate shrew, and western pond turtle. There is a full range of semi-aquatic species inhabiting this area including muskrat, beaver, river otter, and mink.
These waterways are nursery and smolting areas for a wide variety of fish stocks and several Special Status Species: Delta Smelt, Sacramento splittail, Winter-run Chinook.
A large number of Special Status plant species occur here including Suisun marsh aster, Mason's lilaeopsis, Delta tule pea, Suisun thistle, and soft birds beak.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 955-7800	
	Steve Chappell	Suisun Resource Conservation Dist	(707) 425-9302	(707) 425-4402
	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
	Kent Nelson	CA Dept of Water Resources	(916) 227-7581	

2-680 -A Suisun Marsh West: Suisun Slough Drainage - Site Strategy 2-680 -A

Count Solano **NOAA CHART:** SUISUN BAY 18657/18652 **Latitude** 38 10 N **Longitude** 122 05 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site extends upstream from the mouth at Grizzly Bay and includes all the marshy areas and sloughs which are tributary including Goodyear Slough, Cordelia Slough, Wells Slough, Pelfier Slough, Sheldrake Slough, Boynton Slough, Peytonia Slough, Hill Slough, Cutoff

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
There are shallows throughout the sloughs.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
Primary is limiting the extent of oiling of marshy channels and oiling of vegetation and wildlife. The strategies are intended to "box" oil into a minimal exposure of channel and marsh.

SITE STRATEGIES

Strategy 2-680.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 10/05/1997

Objective or Prevention Condition

Minimize spread of oil through channels: use multiple diversion booms to collection sites, and close all side sloughs.

Technique Details Check here means **" No strategy diagram": (X)**

This is a generic strategy since exact origin of a spill is unknown but multiple threat locals exist including the entire Santa Fe Pacific pipeline corridor. Locate oil threat and set booms across sloughs above and below oil slick at a sufficient diagonal to avoid entrainment. Include extra length and midpoint anchoring to account severe tidal fluctuations. Repeat to insure capture. Set up collection with shoreside skimming at best available locale with land access if possible. Otherwise use water-based skimmers with booms anchored to shoreline.

Also, close any and all nearby slough mouths and branches, particularly Honker Cut and Connection Slough which would permit oil move into other areas, particularly Montezuma Slough.

Table of Response Resources

strategy	hboo	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-680.1	3000			24/22+/danforths	4	4	4portable &	Bboats; very shallow; 1 hovercraft	14	14 PERSONS frequent checks	5

LOGISTICS

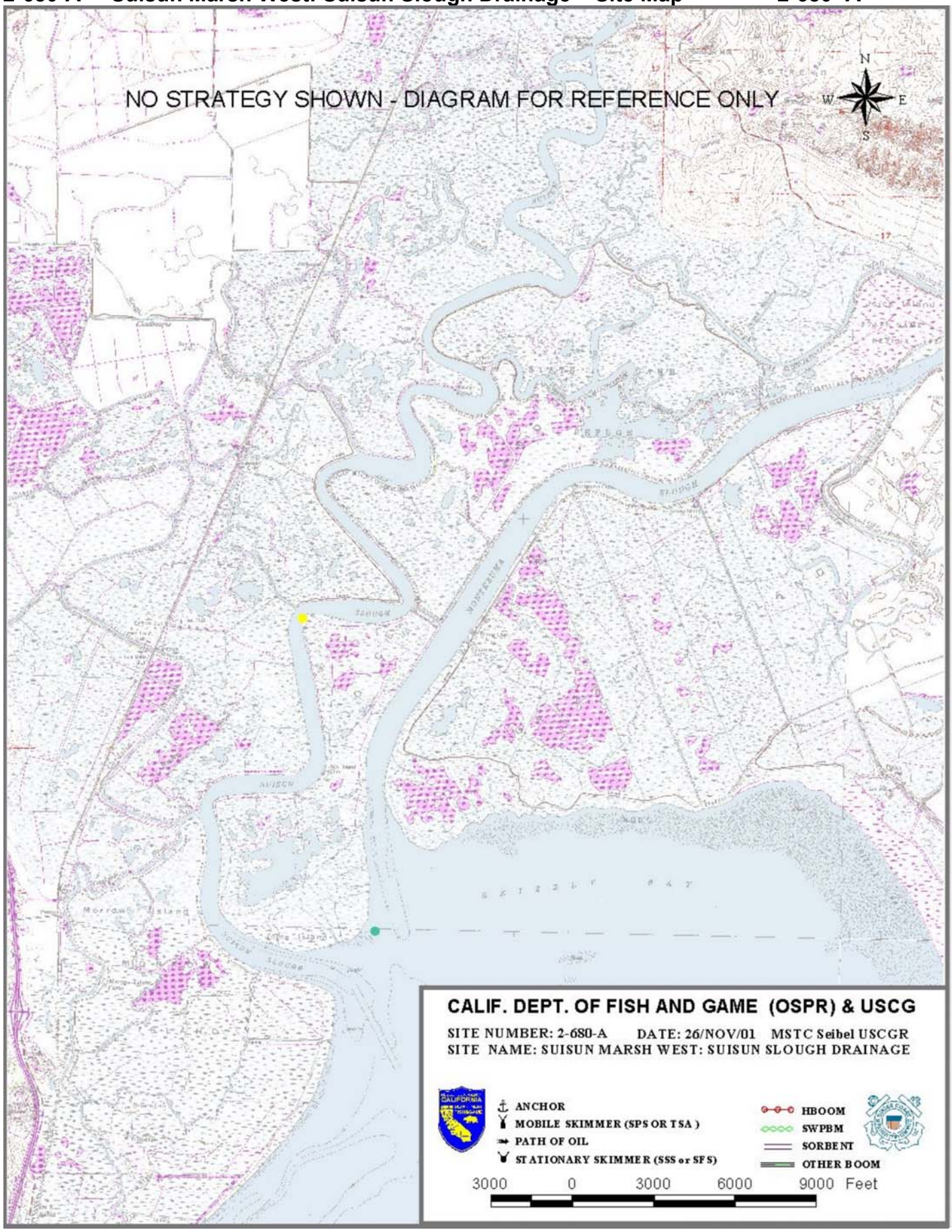
DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
This area is mostly accessible by water from Suisun City or Pierce Harbor. There is limited land access from I-680 by exiting at Lake Herman, Marsh view and other exits which lead to access mostly private duck club roads along the margin.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
VARIABLE DEPENDING ON LOCATION.

WATER LOGISTICS:
Access limitations: depth, obstructions: EXTREME SHALLOW DRAFT AT LOWER TIDES
Boat Launching, Loading, Docking and Services Available: Suisun City marinas and Pierce Harbor.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Deploy from Suisun City, Martinez Marina, Benicia Marina or Pierce harbor. All the above may provide adequate support for field post.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone



NO STRATEGY IS SHOWN: MAP FOR REFERENCE ONLY

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2-690-A Suisun Marsh Central: Grizzly Isl./Montezuma Slough-Site Summary 2-690-A

County: Solano **GRP:** 6 **Latitude** 38 08 N **Longitude** 121 55 W
USGS: Fairfield/Honker Bay/Denverton **OSPR Map:** 142 148 143 **Last ACP Update** 10/05/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site extends upstream from the mouth at Grizzly Bay and includes all the marshy areas and sloughs which are tributary including to Montezuma Slough including Cutoff Slough, Tree Slough, Island Slough, Frost Slough, Cross Slough, Roaring River Slough but not Nurse / Denverton Sloughs. This site includes about one half of Suisun Marsh which is about 50% of SF Bay marshland. It is diked and partially diked salt marsh with emergent tule marsh on slough margins. Some locales are in natural historic condition. Many Special Status Species are present. Most of the land is private duck clubs but large tracts are in public ownership including California State wildlife refuges and Solano County Refuges.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
This marsh has A-level protection priority at all times.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
This extensive salt marsh has a A-protection priority. It ranks among the most valuable sites is California. It is saltgrass, pickleweed, and tule/sedge dominated. There are also upland areas which harbor remnant communities of native plants (Rush Ranch).

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
Extensive waterfowl, shorebirds and marsh birds use of this area for feeding and resting. Special Status bird species here include black rail, Suisun song sparrow, Suisun common yellowthroat, and California clapper rail.

Special Status animals: saltmarsh harvest mouse, Suisun ornate shrew and western pond turtle. There is a full range of semi-aquatic species inhabiting this area including muskrat, beaver, river otter, mink, reptiles, and tule elk.
These waterways are nursery and smolting areas for a wide variety of fish stocks and several Special Status Species: Delta Smelt, Sacramento splittail, Winter-run Chinook.
A large number of Special Status plant species occur here including Suisun marsh aster, Suisun thistle, soft birds beak, Delta tule pea and Mason's lilaeopsis.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 955-7800	
ELOB	Steve Chappell	Suisun Resource Conservation Dist	(707) 425-9302	(707) 425-4402
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
TBELO	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
B	Kent Nelson	CA Dept of Water Resources	(916) 227-7581	
B	Mary Shaw	California Native Plant Society - Solano Pres	(707) 747-5481	

2-690-A Suisun Marsh Central: Grizzly Isl. / Montezuma Slough -Site Strategy 2-690-A

Count Solano **NOAA CHART:** SUISUN BAY 18652/18659/18656 Latitude 3 8 08 N Longitude 121 55 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site extends upstream from the mouth at Grizzly Bay and includes all the marshy areas and sloughs which are tributary including to Montezuma Slough including Cutoff Slough, Tree Slough, Island Slough, Frost Slough, Cross Slough, Roaring River Slough but not Nurse / Denverton Sloughs.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
There are shallows throughout the sloughs.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
Primary concern is to halt movement of oil into or out of the sloughs. The strategies are intended to "box" oil into a minimal exposure of channel and marsh. The marsh here and the marshy margins are full of creature and plant which would be harmed by oil. Response activities can harm wildlife and plants as well. Keep in mind that there are endangered plants and animals under foot. Avoid tromping oil

SITE STRATEGIES

Strategy 2-690.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 10/05/1997

Objective or Prevention Condition
Contain/exclude - minimize spread of oil through channels: use multiple diversion booms to collection sites, and close side channels.

Technique Details Check here means **" No strategy diagram":** (X)
This is a generic strategy since the exact origin of an oil spill can not be predicted, and the east side pipeline corridor crosses several sloughs: Locate oil threat and set booms across sloughs above and below oil slick at a sufficient diagonal to avoid entrainment. Include extra length and midpoint anchoring to account severe tidal fluctuations. Repeat to insure capture. Set up collection with shoreside skimming at best available locale with land access if possible. Otherwise use water-based skimmers with booms anchored to shoreline.

Also, close any and all nearby slough mouths and branches, particularly Honker Cut and Connection Slough which would permit oil to other areas particularly Suisun Slough.

Table of Response Resources

strategy	hboo	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-690.1	0	4000		32/22+/danforths		5	8 4 portable &	bboat: shallow draft; 1 hovercraft	31	31 PERSONS frequent checks	5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
This area is mostly accessible by water from Suisun City or Pierce Harbor. There is limited land access from via Hwy 12 to Grizzly Island Road at Suisun City or Denverton Road (to the easterly portion). Most subsequent access is private duck club roads along the margin.

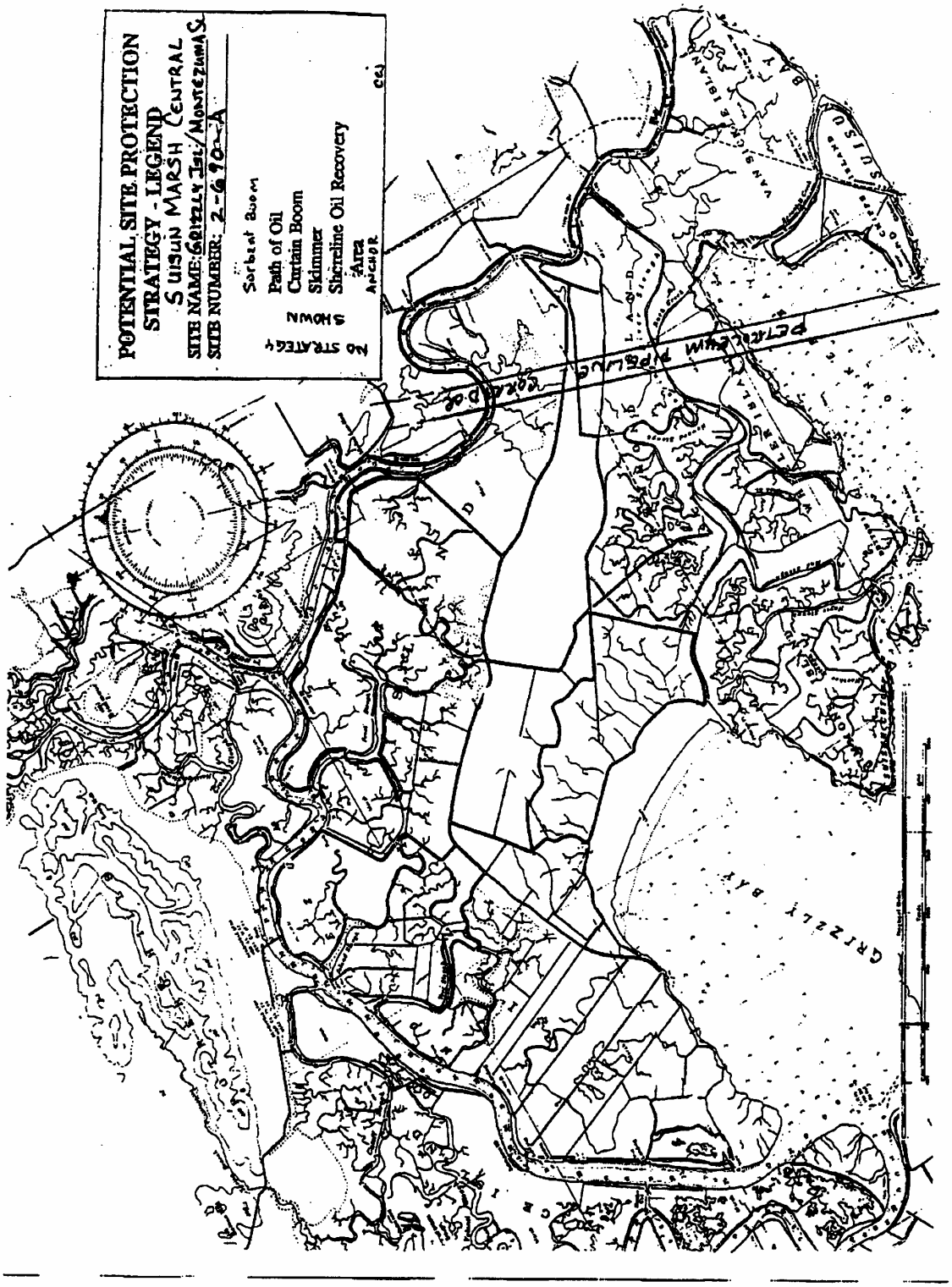
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
VARIABLE DEPENDING ON LOCATION.

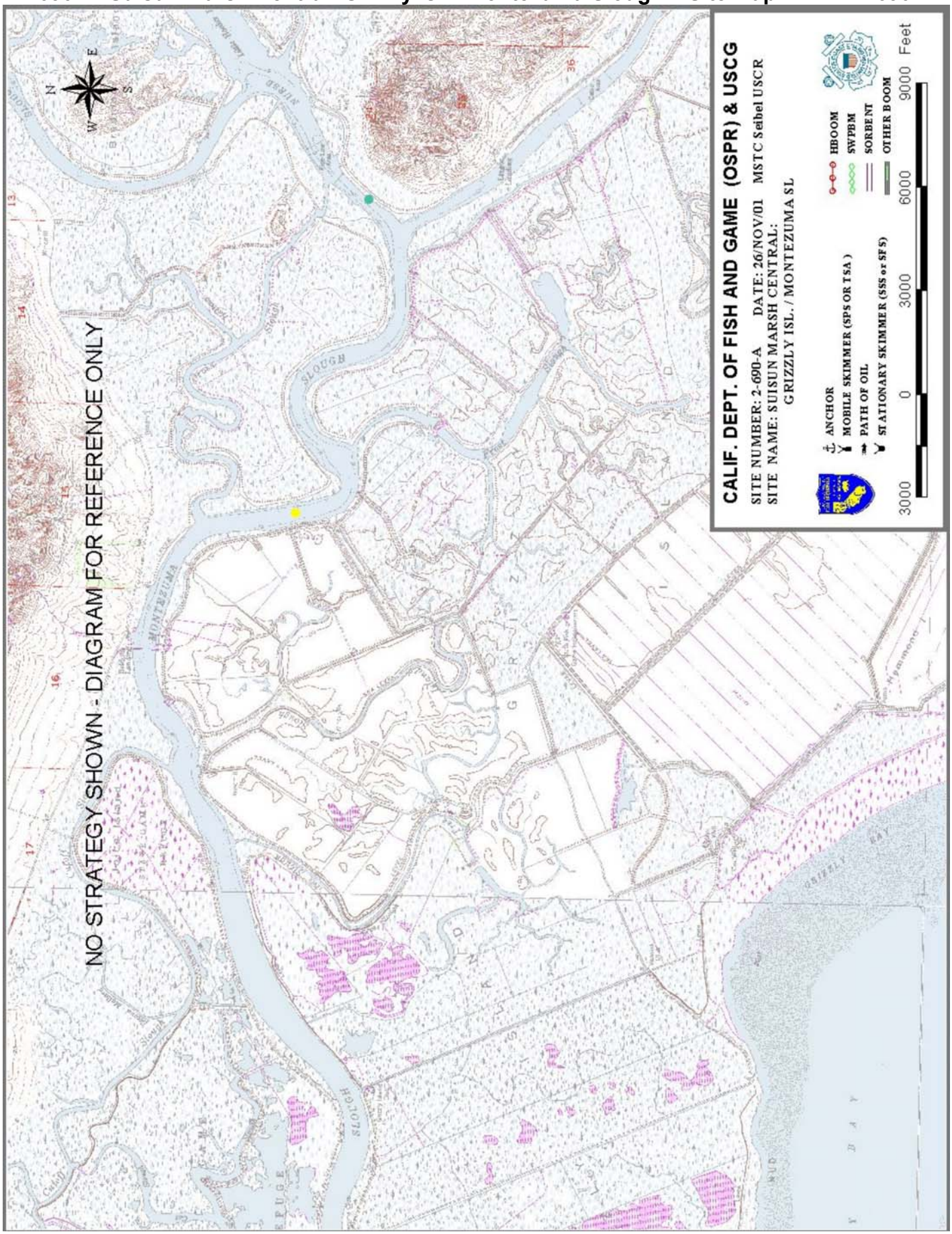
WATER LOGISTICS:
Access limitations: depth, obstructions: EXTREME SHALLOW DRAFT AT LOWER TIDES
Boat Launching, Loading, Docking and Services Available: There is a minimal boat ramp on Grizzly Island (parking lot 7) near Meins Landing. Otherwise, Suisun City marinas, Pittsburg, Martinez / Benicia and Pierce Harbor marinas.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Deploy from Suisun City, Martinez Marina, Benicia Marina or Pittsburg Marina. All the above may provide adequate support for field post, as may Grizzly Island Wildlife Refuge.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone

NO STRATEGY IS SHOWN: MAP FOR REFERENCE ONLY




NO STRATEGY SHOWN - DIAGRAM FOR REFERENCE ONLY
CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-690-A DATE: 26/NOV/01 MSTC Seibel USCR
SITE NAME: SUISUN MARSH CENTRAL:
GRIZZLY ISL. / MONTEZUMA SL
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER ($S5 or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
3000 0 3000 6000 9000 Feet
MONTEZUMA SLOUGH
GRIZZLY BAY

2-695-A Suisun Marsh North: Denverton/Nurse Sl Drainage -Site Summary 2-695-A

County: Solano **GRP:** 6 **Latitude** 38 11 N **Longitude** 121 55 W
USGS: Denverton **OSPR Map:** 143 **Last ACP Update** 10/05/1997

SITE DESCRIPTION: (general characterization of site - geomorphology, habitat, exposure, currents)
This site extends upstream from the mouth of Nurse Slough on Montezuma Slough and includes Denverton and Luco Sloughs and all the marshy areas and sloughs tributary. This site includes about one sixth of Suisun Marsh which is about 50% of SF Bay marshland. It is diked and partially diked salt marsh with emergent tule marsh on slough margins. Some locales are in natural historic condition. Many Special Status Species are present. Most of the land is private duck clubs but a few sites in public ownership.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
This marsh has A-level protection priority at all times.

RESOURCES AT RISK
HABITATS AT RISK:(biological habitats including time of year when most sensitive and vulnerable)
This extensive salt marsh has a A-protection priority. It ranks among the most valuable sites is California. It is saltgrass, pickleweed, and tule/sedge dominated. There are also upland areas which harbor remnant communities of native plants.

SPECIES/COMMUNITIES AT RISK (Brief summaries including time of year when most sensitive/vulnerable)
Extensive waterfowl, shorebirds and marsh birds use of this area for feeding and resting. Special Status bird species include Suisun song sparrow.

Special Status mammal: saltmarsh harvest mouse. There is a full range of semi-aquatic species inhabiting this area including muskrat, beaver, river otter, mink.
These waterways are nursery and smolting areas for a wide variety of fish stocks and several Special Status Species: Delta Smelt, Sacramento splittail, Winter-run Chinook.
A large number of Special Status plant species occur here including Suisun marsh aster, Delta tule pea and Mason's lilaeopsis.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College ((707) 664-0880)) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Laurie Briden	Dept of Fish and Game Bay/Delta Studies	(209) 955-7800	
ELBO	Steve Chappell	Suisun Resource Conservation Dist	(707) 425-9302	(707) 425-4402
B	Brenda Grewell	Ca Dept Water Resources	(916) 227-7520	(916) 227-7554
TBELO	Grizzly Isl W/L Refuge	Ca Dept Fish & Game,	(707) 425-3828	(707) 425-1403
B	Kent Nelson	CA Dept of Water Resources	(916) 227-7581	
B	Mary Shaw	California Native Plant Society - Solano Pres	(707) 747-5481	

2-695-A Suisun Marsh North: Denverton / Nurse Sl Drainage - Site Strategy 2-695-A

Count Solano **NOAA CHART:** SUISUN BAY 18652/18656 Latitude 38 11 N Longitude 121 55 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site extends upstream from the mouth of Nurse Slough on Montezuma Slough and includes Denverton and Luco Sloughs and all the marshy areas and sloughs tributary.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
There are shallows throughout the sloughs.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts)
Primary concern is to halt movement of oil into or out of the sloughs. The strategies are intended to "box" oil into a minimal exposure of channel and marsh. The marsh here and the marshy margins are full of creature and plant which would be harmed by oil. Response activities can harm wildlife and plants as well. Keep in mind that there are endangered plants and animals under foot. Avoid tromping oil

SITE STRATEGIES

Strategy 2-695.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 07/06/1997 Approved last tested ACP date 10/05/1997

Objective or Prevention Condition
Confine/Exclude - Minimize spread of oil through channels: use multiple diversion booms to collection sites, and close side channels.

Technique Details Check here means **" No strategy diagram": (X)**
This is a generic spill response strategy since it is not possible to predict the exact location of a spill origin, and a pipeline corridor lies on the east side of the site: Locate oil threat and set booms across sloughs above and below oil slick at a sufficient diagonal to avoid entrainment. Include extra length and midpoint anchoring to account severe tidal fluctuations. Repeat to insure capture. Set up collection with shoreside skimming at best available locale with land access if possible. Otherwise use water-based skimmers with booms anchored to shoreline.

Also, close any and all nearby slough mouths and branches, particularly Honker Cut and Connection Slough which would permit oil to other areas, particularly Montezuma Slough.

Table of Response Resources

strategy	hboo	swpbm	xboom	Anchoring	sorb	Bb/skif	skimmers -No	special equip	deploy personnel	tending personnel	SO
2-695.1	0	2000		16/22+/danforths		3	6	4portable &	Bboat: shallow draft; 1 hovercraft	21	21 PERSONS	frequent checks	5

LOGISTICS

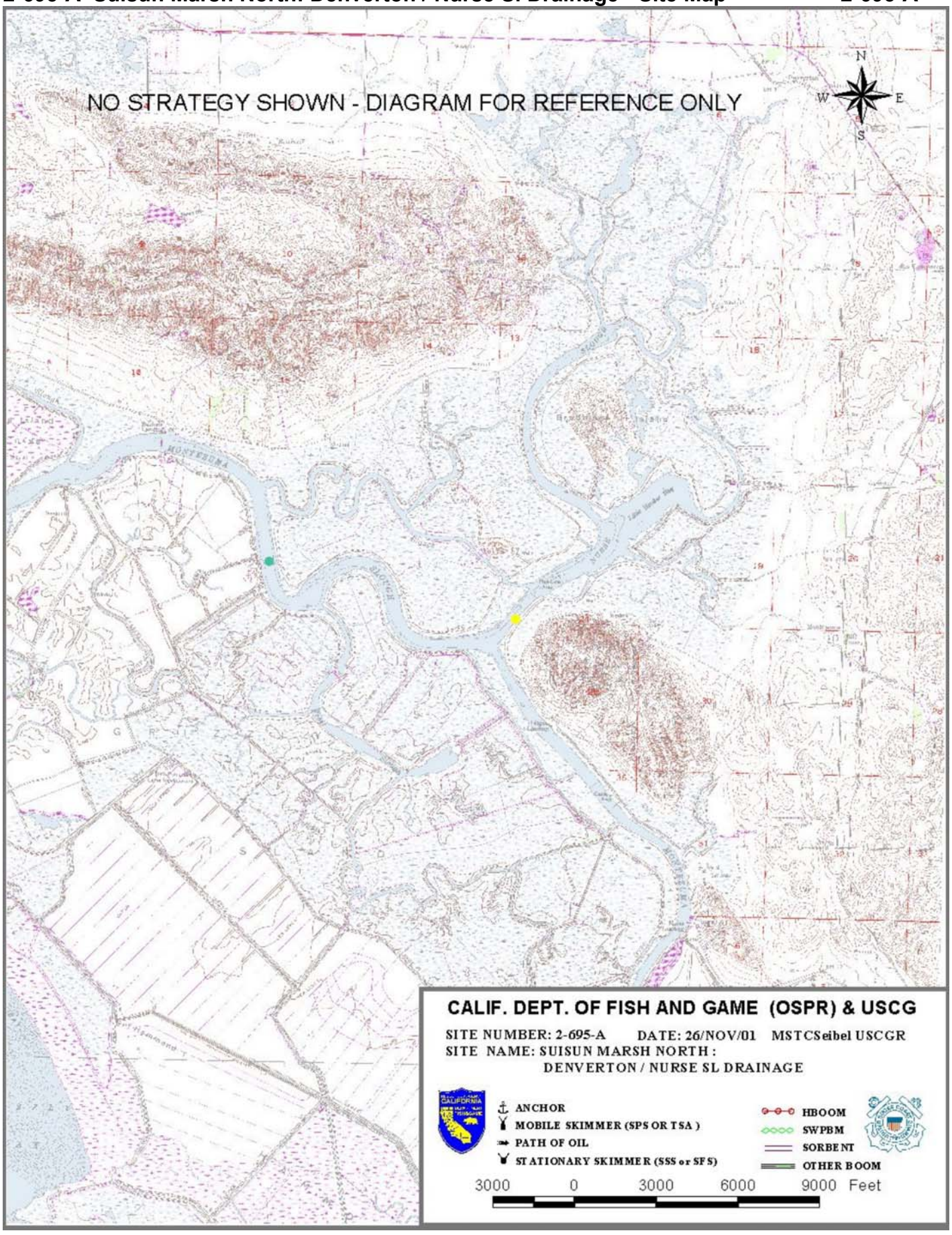
DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
This area is very inaccessible. There is limited land access via private duck club and military roads accessed from Hwy 12 to Shiloh Road (to the easterly edge) and Grizzly Island Road. Water access is from Montezuma Slough via Nurse Slough.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonal..locked gates)
MOSTLY FOOT, ATV, DEPENDING ON LOCATION

WATER LOGISTICS:
Access limitations: depth, obstructions: EXTREME SHALLOW DRAFT AT LOWER TIDES
Boat Launching, Loading, Docking and Services Available: There is a minimal boat ramp on Grizzly Island (parking lot 7) near Meins Landing. Otherwise, Suisun City marinas, Pittsburg, Martinez / Benicia and Pierce Harbor marinas.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Deploy from Suisun City, Martinez Marina, Benicia Marina or Pittsburg Marina. All the above may provide adequate support for field post, as may Grizzly Island Wildlife Refuge.

COMMUNICATIONS LIMITATIONS / PROBLEMS: X No Problems Radio Pager Cell phone



NO STRATEGY IS SHOWN: MAP FOR REFERENCE ONLY

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